ABSTRACT OF THE

Hunterian Oration.

Delivered before the Hunterian Society,

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MR. PRESIDENT AND GENTLEMEN,—When invited by the Council to address you to-night I deemed it my duty, in order the better to fulfil the purpose of this annual Oration, as well as to show my sense of the honour conferred on me, to study the life and writings of John Hunter. I conceive it to be one object of this Oration to show how the work and life of others may animate our own and stimulate us to higher aims. In this sense I have endeavoured to read the life of him whose birth, 134 years ago, we commemorate to-night. An able biographical sketch formed the subject of so recent an Oration that I propose to confine myself to the influence of Hunter's work and to his personal influence. In order to appreciate the effect of his work it will be necessary first to study the position of surgery before his time, in the writings of those who preceded, those who taught him, and of those who were his contemporaries. Next I propose to discuss Hunter's own work and more particularly his method; to note, but only in a very general way, how this teaching differed from that of his predecessors. Then to observe the effect of his teaching on those who followed him, and to ask what was the attraction of Hunter for those who became themselves celebrated men. Finally, to note the personal influence of Hunter and to a certain extent to ask what kind of man he was.

In the earliest times medicine had reached in the hands of the Greeks and Romans a point of great usefulness and importance, and 200 years before the Christian era the Alexandrian school was flourishing. Here dissections were practised and with its famous library every advantage was afforded for developing the scientific study of medicine. It was here that the practice of medicine was separated into three parts and each part assigned to a different person, one of whom was supposed to cure diseases by compounds of drugs and other substances, another by regimen and plans of diet, and the third by manual operations and instruments. This division was not maintained, for the accumulation of knowledge did not admit of it, and the dark period which followed led to medicine being treated as a whole by succeeding writers. Had the Alexandrian school continued, in all probability the separation of the two parts, at least of physic and surgery, would have widened, as it did in the revival of learning. Unfortunately for scientific pursuits, early in the fifth century the northern hordes swept over Europe, and in the seventh the Mahomedan power conquered Palestine, Egypt, Northern Africa and penetrated into Spain. The darkness that followed affected all learning, and the knowledge of books and of the arts remained in Italy, where the Roman withstood the tide of conquest. Here the priests and monks formed the educated class, and, being able to read the Greek and Latin authors, acquired a knowledge of medicine, and for centuries the practice of physic remained in the hands o f the clergy. The Arabs in Spain established a famous school of learning, including medicine, in the eleventh century, and here the older authors were translated into Arabic. It is interesting to notice that the Jews understanding this language obtained a great ascendancy in the practice of medicine. Though laws were passed and Papal edicts issued rendering it penal for a Jew to prescribe for a Christian, yet in every court a physician belonging to this race was to be found. In the year immediately preceding the Norman Conquest a stimulus was given to the study of medicine by the medical schools at Salerno, Naples and Montpelier, which were frequented by students from all parts of Europe. The Salernian School in the eleventh century conferred a licence to practise as a physician and as a surgeon. In reference to surgery the statute was "that the person examined must be twenty-one years of age, and must bring testimonials of having studied physic for five years; if to be admitted in surgery, he must learn anatomy for one year; he must swear to be true and obedient to the society, to refuse fees from the poor, and to have no shares of the gains of the apothecaries." A critical writer of the twelfth century observes that the students return full of flimsy theories, quoting Galen and Hippocrates. They have two maxims which they never violate: "Never mind the poor; never refuse money from the rich." So lucrative did the priests find the practice of physic that they neglected their monastic duties and incurred the displeasure of the Pope, who, looking upon the manual part as derogatory, issued a decree interdicting the priests from performing any surgical operation whatever. They, however, anxious to retain a hold on this branch, employed their servants, the barbers who shaved their heads, to perform a like office for their patients, before applying external remedies. Then "finding these fellows handy with edged tools, the priests taught them to bleed and perform the minor operations, as well as to make salves and poultices and to dress wounds and sores." Hence arose the barber-surgeon. It will be seen that the separation of physic from surgery was first due to an edict of the Pope, the final separation taking place at the end of the fourteenth century. The priests were at length compelled to relinquish the practice of physic, which passed into the hands of some of the learned of the laity, who could read the Latin and Greek authors, while the barbers formed themselves into a fraternity of barber-surgeons. Thus we see that the physician has ever been the scholar; confident in his superiority, we find him despising his less learned brother. The better of the barber-surgeons soon separated themselves from the barbers, and became very early a company of surgeons. In London there were many struggles between the two divisions of the barber-surgeons and surgeons; the former were incorporated as a company, while in 1421 the surgeons and physicians united for the purposes of improving the state and position of both branches of the healing art. Unfortunately, the union was short lived, and the separation gave rise to mutual jealousies and troubles which lasted over three hundred years. So late as 1632 the physicians obtained an Order of Council that no surgeon should trepan, cut for stone, or perform any large operation unless a physician were present, and yet they declined to examine in surgery. This edict was withdrawn in three years. Even after the first separation of the surgeons from the barber-surgeons in 1744, the surgeon was still not allowed to prescribe internal remedies; and in Hunter's time the physician's name appeared on the bed-letters when more than a black draught was ordered. Abernethy did much to remove all this, and so did Cheselden. It was, on the part of the surgeons an earnest of their desire to improve the position of their art at any sacrifice that they took with them only the Aris and Gale bequests, leaving the barbers the hall and plate. Pott and Hunter were appointed the masters of anatomy at the new hall of the surgeons in the Old Bailey in 1753. Even in some of the early Hunterian Orations—and the first was delivered in 1814—several apologetic remarks occur, indicating that the surgeon in assuming a foremost position for his branch, was careful to avoid slighting the physicians. The preceding sketch shows that it was only just before Hunter's time that the surgeons were placed on an independent basis. It was not till 1800 that the charter constituting the company into a Royal College was granted.[1]

[The orator then gave a sketch of the writings of Cheselden, Sharp, Warner, Blomfield and Pott, the immediate predecessors and contemporaries of Hunter.]

A sharp and well-defined line is reached when we examine the writings of the great physiologist and surgeon who forms the subject of our study to-night. For the first time we read of surgical principles, and have described to us how the processes of disease must be studied through those of health. The men of his own time pass away almost forgotten, Pott alone remaining, and we see a new era—a Hunterian era—arise. It seems inconceivable that in the lifetime of one man so much could be accomplished, and we of the present day cannot realise that many of the pathological laws which we discuss with so much familiarity were worked out by Hunter, and that, too, by his unaided efforts. The one from whom Hunter learnt most was undoubtedly his brother William. "It was under his tuition and patronage that the more peculiar talents of his brother were first elicited and cherished, and to his example and instructions we are greatly indebted for many of the advantages which have since flowed down

[1] The above is taken from Rivington's "Medical Profession," South's "Craft of Surgery," and Abernethy's Oration.

through others to us. ..... That Hunter acquired the best physiological knowledge of the time from his brother's lectures cannot be doubted, but he was not satisfied without examining for himself and forming his own conclusions." Not satisfied with Haller, he searched for every fact belonging to the subject he was investigating to form the basis on which he reasoned, and Abernethy, who is his best interpreter, says "he finds no inference deduced from insufficient or irrelevant premisses." Hunter himself tells us, in the introductory chapter to his work on the blood and inflammation, that he compiled the work from notes made in the course of twelve years' residence in London. During this space, he says: "My time was occupied partly in my education under the late Dr. Hunter and partly in assisting him. In the winter session I was principally employed in the dissecting-room, where I taught the practical part of anatomy; in the summer I attended the hospitals." The *European Magazine* for 1792, an extract from which is appended to Abernethy's work, contains an account of Hunter's lectures, and as the editor assured Abernethy that he had the information from Hunter himself, we may look upon the account in the light of an autobiography. From this we learn "that his purpose is to give a comprehensive view of the system and investigate the principles upon which the practice of surgery is founded—viz., to show the actions of the body and its parts when in the diseased state with the actions and effects of nature to recovery, and the necessary and proper assistance to be given to the surgeon." Again: "He (the surgeon) ought not only to know the whole of one simple action, or the knowledge of all the actions singly, but he should ascertain their correspondence, mark their relations and acquire a competent idea of the compound actions and general fabric of the machine. Mr. Hunter, having observed that the greater part of the books published on Surgery contain little else than relations of cases and modes of treatment, and that the practitioners have been too easily satisfied with a collection of facts without embracing the catalogue of diseases as a system, proposes in his course to examine the theory and principles of diseases in a regular series. His ideas, his mode of reasoning, as well as his arrangement of diseases are new, and he therefore has received little aid from books or from other professors. The novelty of his ideas occasions also the application of new terms, and those which he has given he may consider as clear and explanatory, since they are adopted by others and brought into use." From 1760 to 1763 Hunter was with the army on the Continent, whither he went to recruit his health, which had suffered from the assiduity with which he had prosecuted his inquiries into the anatomy of the lower animals. On his return he began teaching in order to obtain an income, and from this time to the day of his death he taught regularly and, indeed, never appears to have left London unless compelled to do so for the restoration of his health. In 1773, when he was forty-five, he began a course of lectures in St. George's Hospital. These he relinquished in 1792, handing over to his successor (Home) his manuscript, with notes on the fly-leaf of the specimens he employed for illustration. These original lectures were never published, nor did Home preserve them, but, for reasons best known to himself, they were destroyed, with many even more valuable writings. Happily, among the many who listened to Hunter there were some who took careful notes, and from those made in shorthand by Mr. Rumsey the able editor of Hunter's works—Mr. Palmer—has compiled the lectures. During his lifetime he did not publish any important surgical works, though that on Inflammation was partly through the press at the time of his death and was published in the following year. In this masterpiece we have his mature opinions, criticised from year to year by himself, and by many generations of pupils. Of this work Hunter tells us in the introduction that it was partly composed thirty years before, when he was with the army before Belleisle. "It ought to be considered as a new figure, composed from rough materials, in which little or no assistance could be had from any quarter." This work, there is every reason to believe, was eagerly read by the leading men of the time. We find, for instance, Abernethy saying: "I know of no book to which I can refer a surgical student for a satisfactory account of those febrile and nervous affections which local disease produces except that of Mr. Hunter." I think to those who have passed from the period of studentship that part of the work which deals with the pathology of inflammation will be found as instructive to-day as it was in the time of which Abernethy speaks. For instance, he defines inflammation as "an increased action of that power which a part naturally possesses, and in healthy inflammation at least it is probably attended with an increase in power; but in inflammation which terminates in mortification there is no increase of power, but, on the contrary, a diminution of it." He means by power, I take it, the ability of the part to direct the processes of health, and in disease the controlling influence over the action or life of the part. So long as the power is capable of directing the processes the course of the inflammation will be conducted to the advantage of the part, as in the union of wounds; but when the ruling and guiding influence is overbalanced and conquered, then action, or rather overaction, having its sway a destructive termination results; or, as Hunter puts it, "a diminished power, joined to an increased action, becomes a cause of mortification by destroying the balance which ought to subsist between the power and action of every part." In these remarks on the power of resistance we are reminded of the latest discoveries in the pathology of cell action—I mean the attractive views on the phagocytic action of leucocytes. It is a good example of what is to be noticed all through his work; he is always suggestive. As you know, it was not until many years later that the part played by the cells was shown, and not till later still that the influence of bacilli and other destructive agents was discovered to be the cause of the inflammatory processes. Hunter, however, recognised that "there are causes of mortification preceded by inflammation, which do not arise wholly from that as a cause, but rather seem to have something in their nature, and of this kind is the carbuncle." Thus, as I have mentioned above, does he point out the differences, and, without attributing the variation, as the older writers would have done, to evil juices and spirits, at once directs the thoughts of others into the appropriate channels of discovery. He is still more instructive when he speaks of the treatment of mortification. "If," he says, "this account of mortification arising from no specific nature be just, we shall find it no difficult matter to establish a rational mode of cure." He objects to the too liberal use of wine because of the depression that follows, and as to local measures, he advises the greatest discrimination. The criticisms on the method in vogue show that he wished to teach only from general principles founded on pathology. He says: "Upon the principles here laid down the bark is the principal medicine as yet known that we depend upon, as it increases the powers and lessens the degree of action. Upon many occasions opium will be of singular service by lessening the action. Although it does not give real strength I have seen good effects from it, both when used internally in large doses and when applied to the part. It is proper also to keep the parts cool and all the applications should be cool."

I have given this lengthy extract because it affords a good example of his method of dealing with treatment, a method that no one used before. He leaves his readers to work out for themselves the details. Let us for a moment recall that when Hunter was teaching in this way there was no other lecturer in London who attempted a similar method; indeed, there were some who thought that in his investigations in anatomy and physiology he was wasting time. A colleague at St. George's, when asked to join in giving a series of lectures, replied that he did not think that the art could be improved. So much at variance were many of the men of his time with his teaching that Hunter was not unfrequently much annoyed at the opposition he encountered. Had not his views proved by the progress of our knowledge to be correct this remark would only show an irritable state of mind, and an arrogant one too. Listen, however, to one who heard him lecture and who knew him well—Abernethy: "He seemed to me conscious of his own desert, of the insufficiency and uncertainty of his acquirements, and of his own inability readily to communicate what he knew and thought. He felt irritated by the opposition he had met with in establishing his opinions, and still more by finding, when he had surmounted this difficulty, that these opinions were, by the malice of mankind, ascribed to others. All which, I think, may be fairly inferred from a single sentence he one day addressed to me: 'I know, I know,' he said, 'I am but a pigmy in knowledge, yet I feel a giant when compared with these men.' As disease," he writes, "is a wrong action of the living parts, the restoration to health must first consist in stopping the diseased dispositions and actions and then in a retrograde motion towards health. The alteration of structure by violence requires only the most simple change in the natural action of the part to restore it, and of course the most simple

treatment by art, if it be such as to require any assistance at all, for there are many accidents where none is necessary. It will be proper to observe here that there is a circumstance attending accidental injury which does not belong to disease—viz., that the injury done has in all cases a tendency to produce both the disposition and the means to cure."

Another practical conclusion he draws from the study of the process of union of wounds is so exactly that upon which we insist at the present day that I am induced to quote again—I mean the treatment by rest with dry and infrequent dressings. "If the edges cannot be brought into complete apposition they must unite by another process than the first intention. If kept moist they will inflame as deep between the cut surfaces as the blood fails in union and there suppurate and granulate, but if the blood is allowed to dry and form a scab between and along the cut edges, then inflammation and suppuration of those edges will be prevented, and this will complete the union." Of the influence of rest he writes: "The first and great requisite for the restoration of the injured parts is rest, as it allows that action which is necessary for repairing injured parts to go on without interruption, and as injuries often excite more action than is required, rest becomes still more necessary. Rest is often admitted from necessity, as from the fracture of a leg, but seldom where motion is only an inconvenience." In the accounts of his published cases we read of the first dressing being made on the fourth or again on the seventh day. In the interesting article on "Scabbing" there are many valuable suggestions. He points out the injurious effects of a poultice in a graze of the shin and the value of assisting the formation of a scab. In burns and scalds he also advises the use of flour to hasten the scab formation. In recent wounds we now seal with antiseptic powders, such as boric acid and iodoform with or without collodion, while Hunter employed blood, and in our day, before we used the aseptic gauzes, we were accustomed, like Hunter, to allow the blood to coagulate on the surface in cases of compound fracture.

Such teaching as this marked an immense advance in scientific thought, and we can understand how these views would be welcomed by the younger men. For the first time surgery was taught as a science; the processes of healing and restoration of injured and of diseased parts were shown to depend on the operation of large and fixed laws. He showed, moreover, that there was one pathology for medicine and for surgery; that medicine in its widest sense was one and indivisible, and must be studied as a whole, for no part can be understood if it be studied without reference to the rest of the body. The physician must understand surgery, and the surgeon the medical treatment of disease. When we remember that in Hunter's time a surgeon was not supposed to give internal remedies beyond a black draught, the importance of this welding of the two branches of medicine by means of a common pathology will be appreciated. As we read this great work to-day we feel a glow of interest, we catch the enthusiasm of a man who investigated for himself, who speaks unfettered by authority, who, moreover, tells us truths which we in our time have seen verified; and, withal, we note the great charm of humility and his recognition of the fact that he is but on the threshold of the subject.

It has been said, and it is no doubt true, as Owen pointed out, particularly with regard to the blood, that Hunter was in many things ignorant of the work that had been done by those who preceded him or who were working in the same direction. This led him to find that he had been anticipated by others and gave, moreover, to those who were opposed to him the means of undervaluing his discoveries. But it was not so much what John Hunter discovered as the use he made of his observations in building up his general principles and laws. I think it is not a matter of regret that he worked alone, or almost so, for, already master of human anatomy, his researches necessitated the examination of five hundred different species of animals, exclusive of repeated dissections of different individuals of the same species. To the classification of these he brought a powerful intellect, an indomitable industry, an original method, and working on entirely new lines he drew from his immense collection of facts the general laws and principles to which I have referred. Surgery he raised from a practical art to the dignity of a science, and showed to physician and surgeon alike that in the treatment of disease there was one common principle. Writing on this, one who knew him well says "that which made him so superior to his competitors was his original expanse of thought, his being exempt from that prejudice in favour of ancient authorities which fetters the youthful mind; it was his steady determination of investigating for himself, his deep scrutiny of every object that came under his inspection, his vigorous intellectual activity." In a manuscript relating to a dissection of a turtle Hunter says: "The late Sir John Pringle, knowing of this dissection, often desired me to collect all my dissections of this animal and send them to the Royal Society, but the publication of a description of a single animal, more especially a common one, has never been my wish." In proof of the important general principles, at a knowledge of which Hunter had arrived, Owen quotes the following passage from a description of the drawings illustrative of the development of the chick: "If we were capable of following the progress of increase of the number of the parts of the most perfect animal, as they first formed in succession from the very first to its state of full perfection, we should probably be able to compare it with some one of the incomplete animals themselves, of every order of animals in the creation being at no stage different from some of those inferior orders; or, in other words, if we were to take a series of animals, from the more imperfect to the perfect, we should probably find an imperfect animal corresponding with some stage of the most perfect." "We may, I think," says Owen, "perceive from the evident difficulty with which Hunter expresses the idea that his mind was oppressed with both its novelty and vastness. Men's thoughts require to be familiarised with propositions of such generality before their exact limits and full application can be appreciated." Had he lived to complete the description and arrangement of his museum the large amount of knowledge buried in his records would have received the proper setting from the master's hand. The obscurity of his style has often been regretted, and it has been attributed to the want of education. He did not possess that full acquaintance with our language which would have enabled him to command words with nearly the same meaning, and so to express accurately the idea he wished to convey. But I doubt if the want of education made all this difference; I rather incline to the view that where obscurity exists it is due to the effort he made to draw from an immense crowd of facts a general law. Moreover, his was a new way of dealing with the subject; "and when we remember that his originality of thought and his independence of judgment, leading him to differ from many who had preceded him, had formed a gradual chain of new and extraordinary discoveries, which in a manner exhausted the language of science, we can scarcely wonder at that obscurity in his writings which we have occasionally to lament."

As I have said in an earlier part of this address, the period following Hunter's time stands out in great contrast with that which preceded him, and to his efforts more than to those of any other was this difference due. Equally striking it is to observe the men who followed Hunter and carried on his work and to note that they were his pupils. Amongst the most brilliant were Cline, Abernethy, Carlisle, Astley Cooper, Home and Earle—all men who have left their mark in surgery. It was not his eloquence that attracted an audience, for his style of lecturing was unattractive; he read slowly from manuscript, seldom raising his eyes, and those who wished to learn had to pay the closest attention to follow him through the steps by which he passed to his general conclusions. He seems to have disliked lecturing, but continued to do so for twenty years, considering the annual review in the light of a criticism of his work. His class was small, but there can be no doubt that it contained the best students of the time. His very method of lecturing shows that he was still thinking over the subject, was still criticising himself and correcting what he had written. He attached no value to opinions that could not be based on facts, and as his store of facts increased he would make the necessary alterations in his inferences. To a pupil—Sir Astley Cooper—who asked with surprise whether he had not the year before stated an opinion on some points directly at variance with one he had just put forth, he replied, "Very likely I did; I hope I grow wiser every year." Occasionally he would say to a pupil whom he saw taking notes, "You had better not write down that observation, for very likely I shall think differently next year." Such remarks as this indicate the searcher after truth, and show that he did not consider the subjects he was discussing finally settled. Moreover, he illustrated his lectures from his museum, the most extensive of the time. It was not till after his death that his leading work was published, so that his influence on others was largely due to these lectures; and there can be no doubt that his very hesitation to publish until he could be sure of the truth of his con-

clusions led others to pay particular regard to what he said. He was attractive in another way, in the influence of his great and untiring industry. The effect of this point in his character is well illustrated by an account of a personal interview given by one of the earliest orators at the College—Leigh Thomas: "Upon my first arrival in London, on presenting a letter of introduction from a mutual friend, he desired to see me at five the next morning. Having already the greatest respect for his great professional talents, it may easily be imagined to what height my curiosity was raised by so extraordinary an appointment. No one will doubt my punctuality of attendance. I found him in his museum busily engaged in the dissection of insects. The interest which he seemed to take in his employment, the sagacity of his observations on it, the acuteness of his general remarks upon whatever subject was started, the almost blunt way in which he questioned me respecting my medical education, united to the kindness of his admonitions relative to my future plans, made a very forcible impression on my mind—it was a mingled feeling of profound respect, surprise and admiration." Abernethy says: "It is scarcely credible with what patience Mr. Hunter examined the structure of the lower kinds of animals. He constructed spectacles with glasses of different degrees of magnifying power, so that by a slight alteration of the position of the head he could look through the one or the other. Mr. Clift tells me he would stand for hours, motionless as a statue, except that, with a pair of forceps in each hand, he was picking asunder the connecting fibres of the vessels or parts." This was written of him in the year of his death.

Another reason why Hunter attracted others was the freedom with which he communicated all he knew on any subject. Careful and particular as he was that nothing should be published till it had been subjected to the test of a long criticism, he was free and open in his communication by word of mouth. Indeed, it was by this method more than by his public writings that he diffused his information. "There was," says Norris, "in Hunter an openness and a free communication of such remarks as could interest those of his own profession and consequently mankind." "His candour," says Abernethy, "was evident in all his actions; he readily told all he knew or thought on any subject." "His was that lofty spirit of science," says Chevalier, "which is ever intent on the discovery of truth, and is then most of all delighted when it can effectually assist others in the common labour and duty of us all—the advancement of human knowledge and the alleviation of human distress. It was this which gave to his example and to his efforts for the improvement of his profession that moral and enduring force without which they would have failed of their aim; he was as willing to awaken and to assist the research of others as to prosecute his own. The thing that vexed him most was to see so much to be done and so few disposed to take a part in doing it. It was with a view to form and to develop such useful characters that, in conjunction with his learned friend Dr. George Fordyce, he founded the society called the Lyceum Medicum Londinense for the benefit of students as well as for settled practitioners in every branch of the profession. To this society he gave gratuitous permission to meet weekly during the season in his lecture-room, where he generally displayed for their inspection the most interesting and instructive additions that were made to his museum."

The formation of a society for discussing medical and scientific subjects, referred to in the preceding paragraph, was another means of diffusing knowledge and another proof of the freedom with which Hunter gave to others the result of his works. In 1767 Hunter proposed to a few friends that they should adjourn from the Royal Society to a tavern and discuss the subjects in which they were more immediately interested. Out of this the earliest attempt to form a society for the discussion of medical subjects arose the Lyceum Medicum. "It met weekly in the lecture-room in Leicester-square and was numerously attended by men of general science." This was, so far as I can discover, the same society as that called "the Society for the Improvement of Medical and Chirurgical Knowledge," from which were issued two volumes of transactions, both containing important papers by Hunter. One written by Home from materials supplied by Hunter contains a full account of the operation for aneurysm.

Besides all that Hunter accomplished for surgery, beyond the trouble he took to improve the position of the surgeon, there was in his personal character that which attracted others to himself and to his mode of study. That he was a genius cannot be doubted by any; that he was a deep and profound thinker is evident, not only from the proofs of this contained in his writings, but we learn it as well from those who knew him. Cline, whose Oration for 1816 was unfortunately never published, but who knew him well, says, "Much as Hunter did, he thought still more—he has often told me his delight was to think"; and, indeed, no one can contemplate the celebrated portrait hanging in the College library without appreciating this side of his character. He is sitting in an attitude of deep reflection, as if about to combine a series of observations into one grand law. His was that kind of genius, however, which was steadied and controlled by a love of truth, by great industry, and, more than all, by a profound humility, not only in regard to his own powers, but also as to the work he had accomplished. His constant saying was, "We are beginning to learn our profession," and though he was aware of the value of his observations, and saw by anticipation the effects they might produce, and was not unfrequently irritated at the unwillingness of others to accept the conclusions at which he had arrived and the truth of which he was able and willing to demonstrate, yet he was often heard to declare that he was not conscious of possessing any peculiar talent, and that if he had promoted professional knowledge it seemed to him chiefly to have arisen from his disposition to distrust opinion and to examine every subject for himself.

With no one else can Hunter be compared more accurately than with Newton. Their methods were much alike. As did his great predecessor, so Hunter, having grasped the great truths of pathology, submitted them to the test of more than thirty years of criticism before he felt justified in giving them to the world with the authority that attaches to a printed publication. To this day many of his laws are as true as when they were deduced. That others have not stood the test of recent advances is but the fate of all forms of knowledge. That which is admitted to be true and wise to-day may, by the advance of time and the progress of science, be compelled to yield to wider knowledge. As the most eloquent of all Hunter's orators—Paget—has beautifully said: "And in this is no disparagement of knowledge. That cannot be despicable which is for the present the best possible, and has in itself capacity for change to a yet better future. But, similarly, that must not be despised which in the past was good, and, though it fell short of the truth, was not wholly erroneous from it; so in estimating Hunter's contributions to the truths and laws of science we must not scorn all those which have not borne unchanged the test of time. It would be as unreasonable to scorn a noble ancestry."

As I have before mentioned, Hunter seemed always delighted to communicate what he knew to others; he did not conceal his designs, and, soliciting the assistance of others, was ever willing to help in return. To young men he gave much assistance and advice, and nothing seemed to please him more than a well-dissected specimen. When Carlisle brought him one day a preparation of the internal ear, Hunter, to whom he was a stranger, immediately gave him a free ticket of admission to his course of lectures. To those in distress he seems to have been generous in an unusual degree, and from this and the amount he spent on his collection he died leaving his family unprovided for. I think from Ottley's "Life" we are apt to get the notion that Hunter was rough, abrupt and brooked no other opinion but his own. Mr. Clift, however, in his letter to Sir W. Lawrence, expresses indignation that so many stories by no means true should have been given to the public, and denies, for instance, that the tendo Achillis was ruptured while dancing, but asserts that it took place on rising and stretching himself on his tiptoes after a long period of close dissection—an explanation quite as reasonable as that advanced by his biographer. He was a man, too, "of very considerable humour; his views of subjects in general were very quick and peculiar, and when so disposed he could place them in a very ludicrous point of view." In another place the same writer (Abernethy) says that "he had a great deal of drollery in his composition." And Mr. Clift, who acted as his amanuensis for the last year and a half of his life, tells us "he was mild and kind in his manner, but not servilely courteous to everybody, and, I believe, made no distinction between high and low, great or small." When, after many years and yet without having sought the position by artifice, he had attained to the foremost place in the profession, and "when the abstract acquisitions of his study had become blended with copious experience, he was appealed to by physicians and by surgeons as a final judge upon all unsettled questions in pathology.

And even in the full matureness of experienced wisdom he dispensed his decisions with unabated anxiety and painful solicitude." It would be impossible to conceive a finer tribute to the knowledge, the wisdom and the professional standing of anyone. To be valued by others for careful judgment, founded on a deep knowledge of disease, and also for the care and caution with which the opinion is delivered, is to attain a high position in our profession. In the last year of his life he was still full of scientific work; he would at this time, though over sixty, stand for hours at a dissection "as if nailed to the spot." Such is the character of Hunter, so far as I have gleaned from those who knew him and those who were best able to interpret his mind. Inadequately as I have portrayed the influence of his great mind on the men whom he taught, imperfectly as I have sketched the method he used and the results he attained, I trust that the effect of my work may at least induce others to make themselves acquainted with his writings.

Fortunately for surgery, Hunter applied the results of his investigations to the improvement of practical details. He did more than any man to raise the position of surgery. He perceived that no system of physiology could be perfect that did not explain the morbid as well as the healthy actions of life, and therefore, says Abernethy, "he appears to me as a new character in our profession, and, briefly to express his peculiar merit, I may call him the first great expositor of disease." As I have shown in an earlier part of this address, he was the first to deal with the processes of disease, to show that pathology was a science. "I am," says Abernethy, "old enough to remember the state of surgery and surgeons in this metropolis previous to the general promulgation of the new facts and opinions he added to the stock of professional knowledge, and I believe him to be the author of a great and important revolution in medical science." "Who," he says in another place, "first explained in a physiological and satisfactory manner the diseased processes I have referred to, the formation of abscesses, the secretion of pus, the interstitial and other growths, the cause and occasion of mortification—was it not Mr. Hunter? We now hear no more of those ancient metaphors, concretion and erosion, but we find all the morbid changes accounted for by perverted action of the ordinary powers and structure of parts, clearly perceiving that the same powers and organisation which by the natural and common actions produce health and beauty of appearance do when perverted occasion disease and deformity." Another writer, who for many years was his assistant and who knew him better than anyone, says, in his first Oration at the College: "From the time of Hunter our profession has no longer been confined within the narrow limits of a practical art; assisted by his labours it has acquired a new character, has assumed a more elevated form, and has expanded itself into a science." All the surgery before Hunter was only that of experience; others, as I have shown, wrote well on practical matters, and none better than Hunter's great colleague, Pott; but "with the science and the exposition of principles Hunter alone deals worthily." "Hunter," says Lawrence, "found surgery a mere mechanical art, hardly emancipated from its connexion with the occupation of a barber. He left it a beautiful science, equal to any in attractive interest, inferior to none in its capability of alleviating human suffering." Slowly, as I have sketched in an earlier part of this address, surgery has been improving, and increased facilities were obtained for acquiring a knowledge of anatomy; but the rare combination that occurred in Hunter of deep and scientific thought, with a desire to apply his discoveries to the alleviation of suffering and the progress of surgery, operated to raise the art into a science. Time does not permit my dealing with the celebrated discovery of the means of treating aneurysm and the reasons which led him to suggest this method. It is an evidence of Hunter's belief that what is true will endure, and in the end will prevail, that he never wrote a single line to recommend this operation. The first account was published during his lifetime by Home. In his lectures Hunter, after strongly advocating the method of laying open the sac and of ligaturing the vessel above and below—a method at that time condemned by the majority of surgeons—thus refers to the new operation. Writing in 1786, the year after the operation, he says: "In December, 1785, I performed the operation in a manner different from that usually practised, and with success. The particulars are given in the *London Medical Journal*. I would only observe that in future I would advise only tying the artery in one part and not to endeavour to unite the wound by the first intention." Such is his brief reference to this great improvement in surgery. There is perhaps no piece of his work that shows more clearly the value of the application of physiology to the practice of surgery than this operation. Hunter connected pathology with physiology, and it is impossible ever to disjoin them. "Before him surgery and physiology were far asunder; no one strong mind had ever deeply studied both and become conscious that both were parts of the same science of living things, and that each might give light to the other and each be a test of the other's truth. This was Hunter's greatest work for surgery, He brought the scientific method into the study of the practice, and he welded scientific knowledge with the lessons of experience."

To quote once more our most elegant and most graceful writer, whose thoughts are ever worthy of the widest circulation: "The influence of such men as Hunter reaches far beyond the time and space of their conscious activity; their true thoughts live after them; their true thoughts not only endure and remain—in the continuity of mental life they really live; they pass on from one generation to another, and in the minds of each succeeding generation they are developed, they grow, they attain more nearly to perfection. Thus, when we honour the memory of Hunter we honour not only that which is passed but that which is still present—a still abiding power of doing good. For Hunter's true thoughts still live in us, and they will live after us and never cease to help and urge men onward in the pursuit of truth. In the world of mind he that is mortal may produce that which may be immortal." (Paget.)

ON THE DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.[1]

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EXTRA-UTERINE PREGNANCY is a subject which is evidently year by year coming steadily to the front. As a disease or accident it is probably liable to occur wherever normal pregnancy is also met with, and it is not too much to say that every practitioner, even in a country district, has met with or will most likely meet with one or more examples of it in the course of a busy practice. Its mortality is considerable, and its dangers are important, varied and imperative in their demand for recognition and for treatment. The proper treatment of this condition is in most cases no longer doubtful or a question of opinion. The operative removal of the pregnancy when life is endangered is recognised as the only rational course to pursue, and this, when undertaken by those conversant with the practice of abdominal surgery, is being followed by the happiest results. There is accordingly every reason that the practitioner should bear in mind the fact that pregnancy will now and then take place in a wrong situation, and that he should be ready to detect the indications of this. Before, however, we proceed to the signs and symptoms of extra-uterine pregnancy we must briefly consider its morbid anatomy. The large and practical outlines of this are not difficult to understand.

Extra-uterine pregnancy begins in one or other of the Fallopian tubes. If quite at the uterine end, encroaching on the uterus as well as on the tube, so that it is not exactly in either, but rather in the wall of the uterus, it is called "interstitial." In every other part of the tube, at the middle or outer end, it is of course tubal and spoken of as such; but while every extra-uterine pregnancy begins in the Fallopian tube, it does not long remain confined to this situation. As it grows it expands the tube in all directions, separating widely the two layers of peritoneum which form the meso-salpinx or fold of broad ligament in which the tube is contained. In some cases, at present imperfectly understood, it appears as if the coverings of the pregnancy underwent local development commensurate with the development of the pregnancy. Certain it is that a pregnancy which has undoubtedly begun in the Fallopian tube may grow without any definite history or sign of rupture

[1] Read at the annual meeting of the Shropshire and Mid-Wales Branch of the British Medical Association, at Shrewsbury, on June 23rd, 1892.

and proceed to full term as a local intra-peritoneal tumour to one side of the uterus, the child and placenta being contained in a sac the wall of which is entire and of considerable thickness. But this is a rare result. The rule is that as the pregnancy grows the covering of the pregnancy gets thinner and thinner until in some places there is nothing but the one layer of peritoneum between it and the abdominal cavity. Then what happens? Either the pregnancy ruptures directly into the peritoneal cavity with sudden and perhaps fatal hæmorrhage—this not infrequently occurs quite early in the pregnancy—or else the pregnancy takes another direction in its growth. It goes on separating the layers of the meso-salpinx and invades the cellular tissue beneath the peritoneum. But though the evil day of rupture is thereby temporarily postponed it is only rarely averted. Sometimes the child and placenta continue their growth to full term under the peritoneum, being "extra-peritoneal" throughout. More often the peritoneal roof or wall gives way and the pregnancy is precipitated or extruded into the abdomen. If the placenta or its neighbourhood be involved in the rupture the danger of hæmorrhage is again supreme, the rupture causing death unless operative interference save the patient's life. If, on the other hand, the child be uppermost and with or without its membranes, the only part of the pregnancy directly involved in the rupture, it is possible for such a pregnancy to go on, the child remaining and living in the abdomen during the rest of its gestation.

Now, what is the bearing of this on the clinical history of extra-uterine pregnancy? 1. At the beginning of an extra-uterine pregnancy there is of necessity an enlargement in the Fallopian tube—in other words, a "tubal tumour." 2. There is an early period when this is likely to burst before the meso-salpinx and broad ligament can be much invaded by the growth of the pregnancy. This "primary" rupture is apt to occur at the fifth or sixth week of the pregnancy. 3. There is a later period of rupture—a rupture less startling and sudden in its onset; one that happens after considerable opening up of sub-peritoneal tissues; one usually preceded by repeated attacks of sub-peritoneal hæmorrhage and by the formation of a distinct and often visible tumour. This rupture is apt to occur about the third or fourth month, when one half of the pelvis has been filled by the pregnancy, and its further progress is necessarily upwards into the abdomen. 4. In spite of these dangers it is possible for an extra-uterine pregnancy to go to the full term without destruction. Then it may be found (*a*) enclosed in an intra-peritoneal sac; (*b*) beneath the peritoneum, extra-peritoneal; (*c*) more or less free in the abdomen.

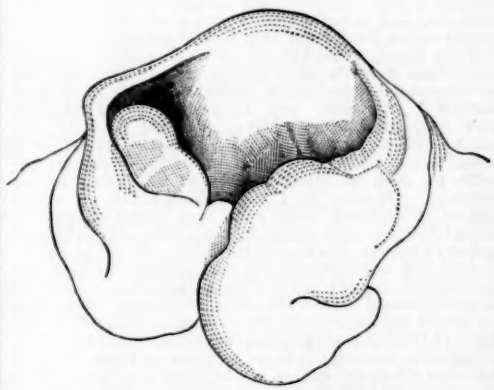
From the foregoing sketch it will, I think, be seen that the subject of extra-uterine pregnancy naturally divides itself into three stages—1. The early stage, from commencement of the pregnancy until rupture has occurred. 2. The middle stage, at or about the usual time of rupture (from the fifth to the sixteenth week). 3. The advanced stage, when the child is either viable or has passed beyond the normal period of gestation, and has died for want of birth. Each stage has its own special clinical features and these have now to be described.

1. In the early stage, before rupture of the tube has taken place, the patient usually has the uncertain symptoms of early pregnancy. There is probably slight morning nausea or sickness, with some increased fulness of the breasts, and when the next menstrual period is looked for it does not take place. The patient often believes she is pregnant, and up to this time has no special pain or discomfort that should make her suspicious that the pregnancy is other than a normal one. Very soon, however, irregular hæmorrhage comes on with some pelvic pain, and for these symptoms the patient's medical attendant is likely to be consulted. If a vaginal examination now be made, a tumour can be felt in the pouch of Douglas behind the uterus possessing all the characters of a distended Fallopian tube. It is not very easy to make an exact representation of this in a pencil sketch, but the accompanying diagram, prepared from the examination of cases which have come under my own observation, will show, I think, the leading features of the swelling to be felt by vaginal touch. (Fig. 1.) This swelling is not very sensitive to pressure unless some rupture of the tube has already taken place, and there may be nothing in the general aspect of the case to make the ordinary observer apprehensive of danger. But where you find a history of amenorrhœa followed by irregular loss, together with signs of a tubal tumour in a woman of child-bearing age who has been previously healthy, there is every reason to suspect that extra-uterine pregnancy has begun. If such a tumour as I have sketched be present, how can one be certain that it is tubal? Mainly by a short process of exclusion. The only tumour which exactly simulates tubal distension is the fundus of a retroflexed uterus, and careful bimanual examination should in most cases determine the position of the fundus. If there be a difficulty, and the patient already has some hæmorrhagic discharge, it may be permissible to use the sound as an aid to diagnosis. This when passed will, of course, prove whether the tumour be fundus or not. Small

FIG. 1.

ovarian tumours or enlargements are occasionally found in the pouch of Douglas, but these are never so closely united to the uterus, nor are they so directly posterior in position, as is the tumour formed by a distended Fallopian tube. Some practitioners, whose mental picture of the Fallopian tubes is (unconsciously?) borrowed from the anatomical plates of their student days, have a very real and almost insurmountable difficulty in reconciling this with the position which I have described as characteristic of a tubal tumour, and it may assist these if I append an outline sketch illustrative of distended Fallopian tubes. The pouch of Douglas is the lowest part of the pelvis, and the fimbriated end of the Fallopian tube is its largest part. Consequently, when a tube becomes distended,

FIG. 2.



the heaviest part of the tube tends to fall (as depicted in the accompanying illustration) behind the uterus into the pouch of Douglas, somewhat turning or twisting on its long axis as it does so. (Fig. 2.) I have entered into some detail regarding the features of a tubal tumour, because its presence is not only a most important sign in early diagnosis, but, if rupture be delayed, it is a sign which persists during some months of extra-uterine gestation. The presence of such a tumour is of itself only characteristic of tubal enlargement, and, considered alone, may be due to hydro-salpinx, to pyo-salpinx, to

more or less solid enlargement of the tube, or to tubal pregnancy. It is only when associated with the signs and symptoms of early pregnancy that it becomes really distinctive of early extra-uterine gestation. But in all the other affections of the tube which produce enlargement there is usually a history of inflammatory illness of some duration, and it is therefore of importance to notice that such history of previous illness is absent in extra-uterine pregnancy. The patient usually considers herself quite well until the pregnancy has begun. It was for this reason I mentioned the "previously healthy" condition of the patient as an element in the formation of an early diagnosis. If I repeat the passage, the importance of each element on which I lay stress will, I think, be recognised. "Where one finds a history of amenorrhœa followed by irregular loss, together with signs of a tubal tumour in a woman of child-bearing age who has been previously healthy,[2] there is every reason to suspect that extra-uterine pregnancy has begun."

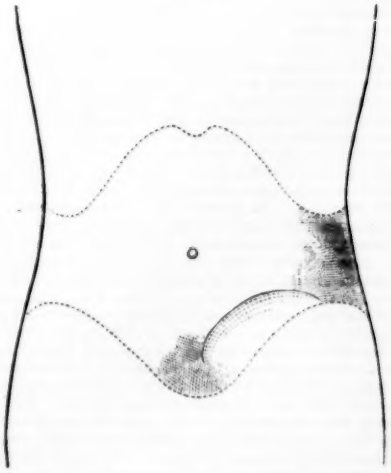
2. Primary rupture may come suddenly, without any warning, and the resulting hæmorrhage be fatal in a single day. There is, then, no time or opportunity for a careful physical examination, and the symptoms of concealed or internal hæmorrhage must be our guides to action. These are very liable to be mistaken by a surgeon who has never before had the object lesson of an actual case to teach him, and I need scarcely apologise for detailing in their order those signs which I have noticed as characteristic of internal bleeding of dangerous amount. First, there is increased frequency of pulse without pyrexia. The pulse, which has been, for example, at 80, rises to 100 and continues to increase in frequency. As it rises to 120 or more it perceptibly gets weaker. After a short time this is followed by sighing and faintness, then by vomiting, then by marked pallor of the lips, the face and fingers. Finally, the pulse, which has obviously been growing progressively quicker and feebler, in a very short space of time takes on an absolutely "fainting" character—that is, for some seconds it cannot be felt at all or is altogether too weak and uncertain to count; then for a few seconds or longer it slightly recovers some strength and volume; then it is lost again, the ebb and flow being repeated with ever-increasing feebleness until the final end. The patient's intellect during the whole of the time is, as a rule, wonderfully clear, and although she feels that her condition must be exceedingly grave, she shows herself to be fully conscious of those who are around her and the measures that are taken for her relief. This is true in the main for all bleeding which proves fatal without the surgeon's aid. In the special class of cases which I am now considering there will, in addition to these symptoms, be found some guide as to the source of the hæmorrhage. There will be the clinical history of early tubal pregnancy and direct abdominal symptoms and signs, abdominal pain and tenderness and rapidly increasing abdominal distension. By vaginal touch the experienced finger may also find a full and boggy condition of the pouch of Douglas suggestive of the presence of fluid or semi-clotted blood within the pelvis, but the symptoms denoting that a lethal hæmorrhage is actually taking place are of chief importance. There is no time to be lost in such a case, for though life may be saved almost at the last moment (on at least four occasions I have had the good fortune to meet with success when the patient seemed moribund, once after tubal rupture and three times after secondary hæmorrhage, the sequel of ovariotomy), we cannot count on this, and the time for operative aid soon passes. In describing the morbid anatomy of this "middle stage," on the consideration of which we have now entered, I observed that intra-peritoneal rupture was frequently postponed by the opening up of sub-peritoneal tissues. Under these circumstances there is no loss of the physical signs and symptoms already enumerated as diagnostic of the early stage of extra-uterine pregnancy, but there is a further development or extension of these which is characteristic and deserves attention. The "tubal tumour" which was felt in the early stage behind the uterus undergoes development to one side of the pelvis—from a comparatively small swelling, situated entirely posterior to the womb, growing to a mass of considerable size, the bulk of which is lateral in position. In three cases of this kind which have come under my care little or no pain of any importance occurred until the third month. Irregular hæmorrhagic discharge from the vagina had taken place—in one case from the beginning of the pregnancy, in the other two after seven and after eight weeks respectively; but the actual illness, in the estimation of the patient, dated from the early part of the third month. This illness commenced with sudden and acute pain referred to the side of the abdomen and pelvis on which the pregnancy was forming, some pain thereafter persisting until the cause of it was removed by operation, while attacks of more acute pain recurred at irregular intervals. These attacks of pain have been supposed by some to be indicative of rupture into the peritoneal cavity, and in a few instances this may be a true interpretation. But so far as I was able to ascertain in the cases of which I am speaking, the attacks of pain pointed rather to sub-peritoneal hæmorrhages which were not necessarily associated with any special rupture other than that of sub-peritoneal bloodvessels. With the attacks of pain the tumour visibly increased in size, its upper margin appearing above the groin and forming a globular mass on one side of the abdomen quite evident to the patient herself and certainly growing in size from day to day. This tumour appearing above the groin is very characteristic of all broad ligament effusions. It is met with in hæmatocele of the broad ligament unconnected with ectopic gestation and in broad ligament abscess, and the general outline or contour which is occasioned by it on one side of the abdomen is seen in the accompanying sketches, which are taken from two of the cases I have been describing. (Figs. 3, 4.) In one case the attacks of pain were accompanied by considerable pyrexia, the temperature rising to as much as 102° F., and in all they were followed by gradually increasing and finally marked anæmia, distinctly marked in the colour of the lips and face, but not materially affecting the pulse or only temporarily doing so. In one case, not included in those which I have been describing, the tumour remained central throughout. In this case the cyst of pregnancy, which suppurated, remained directly behind the uterus and finally overtopped the fundus, being opened and drained in this situation at the time of operation. Another case (which I have published in some detail elsewhere) presented all the external configuration which I have described as resulting from growth and hæmorrhage beneath the peritoneum, but on operation its upper limit was found to be formed by adherent omentum, and the child in this case appeared to be really within the abdomen. If I briefly recapitulate the signs and symptoms to be observed in cases of extra-uterine pregnancy at the latter end of this middle stage, I notice that we find the history of some amenorrhœa, followed by several weeks of irregular vaginal hæmorrhage, and a tubal tumour extending to the one or to the other side of the pelvis and appearing above the corresponding groin as an exceedingly painful and tender swelling, which grows from day to day. On examination the uterus is found to be empty. The patient has attacks of ever-increasing pain, accompanied by distinct and progressive anæmia. (At this stage rupture into the abdomen is imminent, if indeed it has not already occurred, and operation should not of course be delayed.)

3. All cases which have survived to the advanced stage of extra-uterine gestation may be divided into two classes: those in which the child is living and those in which the child is dead. In the first class I do not think there should be much difficulty in diagnosis. In the only case which I have seen of this class it could be easily ascertained that the uterus itself was empty, while the child could be plainly distinguished through the abdominal walls, the fœtal heart being heard more easily than in normal pregnancy. In the other class the case is altogether different. Beyond a large inert tumour, the nature of which may be hidden by the thickness of its walls, we may have nothing but the history to suggest the possibility of pregnancy. There is no fœtal heart beat, no fœtal movement, no placental souffle, the patient's breasts may have lost all indication of a pregnant state, and if septic disturbance has already taken place the patient may be in no condition to answer intelligently the questions of the examining surgeon. The history of amenorrhœa may be vague and incomplete, and even if present and distinct we know that this is not an uncommon association or symptom of ovarian tumour which the abdominal swelling will closely simulate. Nevertheless a patient and careful study of the history of such a case will often lead the surgeon to a successful diagnosis. The slow enlargement of the abdomen for nine months, followed, after death of the child, by marked constitutional disturbance of febrile and

[2] The words "previously healthy" must be understood as referring solely to the *immediate* history of the patient. There may be old history of pelvic mischief from which the patient has apparently quite recovered, but as a rule there is no recent history of pelvic trouble before the date at which pregnancy might have begun.

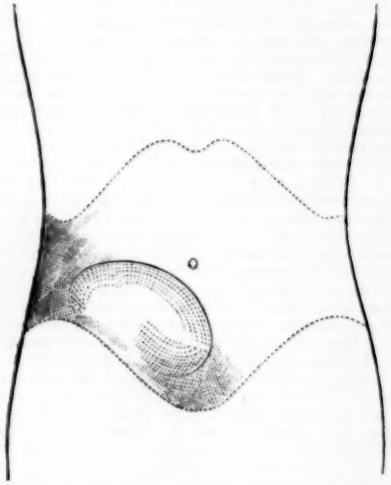
adynamic type, is a history which is only rarely associated with an abdominal tumour of different character. The child-bearing limits of age and the probabilities of pregnancy in any given case are also elements in diagnosis which of course must never be forgotten; and on deep palpation of the tumour one may sometimes feel the resisting body of the fœtus after displacement of the fluid which surrounds it,

FIG. 3.



the only pathological state within the abdomen which yields a similar sign being a solid tumour, usually malignant, surrounded by ascitic fluid. The case of difficulty of diagnosis at this stage will of course largely depend upon the position of the child and on the thickness of its coverings. When free in the abdomen, palpation of the child is remarkably easy; when thickly covered, the pregnancy may presen

FIG. 4.



very great difficulty in the way of ready and decisive diagnosis.

In a paper of this kind it is only fair to one's readers to state exactly the experience on which it is based. The present paper is founded on the personal observation of twenty-four cases of extra-uterine pregnancy, twelve of which came under my own care before operation. Of these twelve cases, in one only was the nature of the case altogether unsuspected by myself before I operated. In two cases I simply diagnosed the condition as a tubal tumour without further qualification; in the remaining nine cases I diagnosed the condition as due to extra-uterine pregnancy, and in eight of these the diagnosis was proved to be correct by subsequent operation. The ninth, an early case, recovered without operation; a small sub-peritoneal hæmorrhage stopped the pregnancy, and the resulting hæmatocele was absorbed in the course of five or six weeks, during which the patient was kept confined to her bed. Three times I have diagnosed extra-uterine pregnancy and have been mistaken. As these mistakes (the one referable to the supposed early stage, another to the middle stage, and the third to the advanced stage) are, I believe, strictly typical of the diagnostic errors into which we may still be likely to fall, it may be instructive to report them. The first was a case of retroflexion of the gravid uterus with intra-peritoneal adhesions. The second was a case of pyo-salpinx of large size in which there was a history of three months' amenorrhœa. The third case was one of malignant disease of both ovaries. This constituted a large abdominal tumour which had been gradually forming for twelve months. Menstruation had ceased from the first appearance of the tumour. The febrile and adynamic state of the patient was quite as suggestive of septic infection as of malignancy, and on vaginal examination the finger, after displacing some ascitic fluid, distinctly felt two malignant nodules which exactly resembled the feet and ankles of a fœtus at full term. Such cases may occasionally mislead the most practised diagnostician.

But there are other sources of error which may cause difficulty, especially to those who are less experienced, and these call for some consideration before I conclude. One of these is an error as to the field for observation. Practitioners have said to me: "I have attended upwards of a thousand cases of labour and have never met with a case of extra-uterine pregnancy. These cases must be exceedingly rare." I have answered: "Certainly those cases of extra-uterine pregnancy which are met with among instances of expected labour are extremely rare, for it is only those cases which have survived to the advanced stage that it would be possible to meet in such association. The proportion is much wider than that which you suggest. It may be possibly one in twelve or twenty thousand—I do not know exactly. It is not here that we must look for ectopic gestations, but in the daily cases of general practice. Has a practitioner never been called late at night to a patient who was suffering from sudden abdominal pain—a case presumed, perhaps, to be one of colic? He has given an opiate or carminative, and on calling the next morning e has expected to find the patient well again; but she is evidently worse, even dangerously ill, and by midday she has died. Such may be roughly the history of a case of early rupture. Or, again, the medical man may have met with a case of supposed parametritis or pelvic cellulitis in which there was a distinct mass on one side of the pelvis. The patient has been kept in bed, but the swelling did not go down, neither did any abscess form or pus discharge. The swelling increased, the patient became worse, and after two weeks' attendance she died rather suddenly with abdominal symptoms, which indicated some internal perforation. Such may be roughly the history of a case of tubal pregnancy which has invaded the broad ligament, and after some three or four weeks' growth has ruptured into the abdomen."

Another source of error is the coexistence of a normal intra-uterine pregnancy with some other abdominal tumour. This is found in a rather large number of pregnancies—either an ovarian cystoma or a myoma or carcinoma being the more common tumours to be found in this connexion; and one might be tempted to conclude that because there is some abdominal tumour present the pregnancy is out of its proper place. In every case of extra-uterine pregnancy which I have met with it has been possible to satisfy oneself that the uterus was empty. In some cases it has been enlarged; in one the sound passed to five inches, but there could be no doubt that the tumour was outside the uterus, and that if pregnancy existed at all it was certainly not occupying the uterine cavity. This is, of course, the crucial point that will always eliminate the class of case we are now considering from the diagnosis of extra-uterine pregnancy—the determination that the uterus itself is empty. There is one exception that is so rare that it may be said to prove the rule. This is the possible presence of a normal pregnancy within the uterus, together

with a second (extra-uterine) pregnancy outside the uterus. Such cases have been recorded, and are said by some statisticians to be frequently met with. They belong, however, rather to the curiosities of medical literature than to the field of practical gynæcology.

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PSYCHO-THERAPEUTICS.

ANOTHER FRAGMENT.

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IN THE LANCET of Aug. 20th Dr. Dale published a paper under the above title. The first part of the article consisted of a number of examples of the influence of the mind on the body in producing diseases, and the second part of examples of the influence of the mind in curing or removing diseases, with an eulogy on the therapeutic value of music. Since Dr. Hack Tuke produced his work on the "Influence of the Mind upon the Body," so full of interesting examples, both these points have been fully admitted. Therefore, in an article on Psycho-therapeutics some fresh observations on the practical application of these principles were to be expected. I was disappointed, however, at the brevity of Dr. Dale's remarks on this point, at their generalness and want of useful detail and at their lukewarmness, in spite of the evidence he has brought forward. He states: "It appears then, finally, that Faith and Hope are the two great principles which the physician must encourage or seek to evoke in his patient," and which "may perchance create within him a courage which will enable him to make at least a brave stand against his foes," and he who expects more than this will, Dr. Dale thinks, be disappointed. For my part I think it very disappointing to find these to be the whole conclusions of a scientific article on psycho-therapeutics at the present day, seeing that they have been fully recognised and applied in medicine for many generations. In the following lines, therefore, I would wish to supplement Dr. Dale's article by a fuller account of the most recent views on psycho-therapeutics and the scientific application of these principles in practice.

In order to discover the principle of the scientific application of psycho-therapeutics, it is very instructive to study the numerous examples of the unconscious application of them. Of this I will give a few examples.

Religious relics have had a great reputation for the cure of diseases, and Dr. Hack Tuke relates how the Rev. Fred. Wilfred Faber, who suffered from severe headaches and sickness which completely prostrated him, was instantaneously cured by the application of a relic—a piece of linen of St. Mary Magdalene of Pazzi—to his forehead. A sort of fire went through his head, through every limb down to his feet, causing him to tremble, and he cried out, "I am cured; I am quite well." In this instance an excellent and good man, having a strong religious faith in the efficacy of the relic and complete confidence that by some supernatural means this piece of linen was able to exert an influence over him, obtained instantaneous relief, when in this frame of mind he applied the relic for the purpose of removing the headache. This case may be taken as one out of innumerable examples of the power of religious faith, the most powerful of all psychical agencies, in effecting "miraculous" cures.

The next example is that of magnetic healing. A very intelligent lady, a friend of mine, who believes in this agency and who lives in an atmosphere of absolute faith in the healing powers of a certain magnetic healer, went to this man when she was suffering from a gumboil, which gave her great pain. This man passed his fingers on the cheek over the painful swelling and almost instantly all pain left the gum, and the swelling disappeared in the course of the next twenty-four hours. This lady had complete belief in the existence of animal magnetism, which so many of the pseudo-scientific hold, and in its mysterious healing properties; she also had perfect confidence in the healer consulted being able to remove the pain of the gumboil by these means.

The third example I shall give is that of the action of a remedy with a very great reputation but alleged to consist of nothing stronger than distilled water. A lady was suffering from cancer and was in the last stage of cachectic exhaustion, when her husband was much impressed with Mr. Stead's article on Count Mattei's cancer cure and he determined to make a trial of it on his wife. With the first dose all the wracking torture that the woman suffered from disappeared, and she continued taking this remedy for the last fortnight of her life with total alleviation of pain. In this case we have a woman whose hope of recovery had been extinguished, when suddenly there appeared a heaven-sent remedy whose action was subtle and sure, and she clutched at it with a faith and a hope born of her despair. The result of its use was that, as regards her subjective feelings, she felt recovered, though the fatal disease was unaffected. A similar fact is stated to have been observed by the committee of inquiry into Count Mattei's remedies.

These three instances which I have given are very good examples, though unconsciously so, of the practical application of psycho-therapeutics, and what we must do is to see if the orthodox members of the profession may honourably and scientifically make use of this agency without also practising fraud and deception. The first feature to be noted in these three cases is that each of the agencies employed had a great reputation. Of that with the sanction of religion it is unnecessary to speak; of animal magnetism there is the semi-scientific foundation which has been given to it, as well as the undefined mysteries attaching to magnetism and electricity in the popular mind; and of Count Mattei's remedies, it is certain that they were puffed up by extravagant assertions and by reputed examples of their power, that carried conviction to most people ignorant of pathology. But the most important and uniform feature in these cases is the subjective mental state of the patients. They all had a firm belief in the agency they were using; they all had complete confidence that they were able to be cured, and they all had the expectation of being cured. Now, I ask, cannot this reputation of the agent and this frame of mind in the patient be developed and made use of in a scientific manner for therapeutic purposes? This question has been solved in the affirmative. In the French town of Nancy, among the poorer classes, Professor Bernheim has acquired a reputation for the cure of disease that is almost unbounded, and these classes go to his wards in the city hospital with the utmost belief and confidence in his ability to cure them. The result is that Professor Bernheim, by merely asserting to many patients in the wide-awake condition that they have no pain, removes at once any pain that they may have had; by ordering them to sleep, they go off to sleep at once; and by telling them that they cannot raise their arms, they are unable to do so, and so on. The same thing is observed by Dr. Bramwell of Goole, where he has acquired a reputation resembling Professor Bernheim's at Nancy. He demonstrated four patients to the Congress of Experimental Psychology in London, and whatever he said to these patients in the wide-awake condition was instantly believed and took place. He produced anæsthesia, total and partial, hallucinations and sleep, all in a moment, by giving a verbal or written order. In one of the women he had caused to be extracted painlessly seven teeth out of eight by the simple assertion that she would suffer no pain, and he had also by this means stopped sea-sickness. His power for the benefit and comfort of these patients in the minor and more common ailments of life by simple assertion was almost complete. The possession of this power by one or two members is of very little value to the profession as a whole, and, through it, to the general public, but I may mention here that psycho-therapeutics is unconsciously made use of by all those with reputations in our profession. It is a commonly accepted belief that a well-known consultant will often speedily cure an ailment with a drug that has proved of no benefit when prescribed by a young man with a reputation still to make. This, of course, can only be done through a psychical agency. The patient must have greater confidence in the powers of the consultant and in his ability to cure him than in the young practitioner, and a greater if not complete expectation of being cured. These feelings are no doubt enhanced by the impressive manner of the consultant, by his crowd of patients from far and near and by his big fee. The last item has a distinct psychical significance, for we automatically associate a value to an article in accordance with the cost or difficulty of obtaining it, and this has been true since the days of Naaman the Syrian.

In addition to this use of psycho-therapeutics in medicine there is also no doubt a daily use made of this agency by the numerous body of family physicians, of whom we have just reason to be proud and who have acquired the respect and

confidence of their patients. A word from what is called "our own doctor" will often do more good than scientific medicinal treatment by a skilful stranger. Unconsciously and in these indirect ways psycho-therapeutics is probably very greatly made use of by the profession, and I think the success or otherwise of many physicians depends largely on having or not having acquired the power of giving such mental suggestion to their patients. Such a method of using this agency can, however, hardly be described as either rational or scientific.

By far the most general and scientific application of psycho-therapeutics is made by adopting the system of suggestion as practised by Professor Bernheim. He has found that the majority of patients, even within the area of Nancy, will not accept orders or suggestions for the relief of pain &c. in the waking condition; but he has discovered that if he first suggests to them that they are asleep, which suggestion the vast majority of his patients receive very readily, he is then able to order or suggest that their pains &c. have gone, and they now believe him implicitly, with the result that they are so far cured. He tells the patients that if they will follow his directions he will remove their ailments. He asks them to prepare to go to sleep, and in a persuasive yet confident tone he suggests the symptoms of sleep. In a few minutes the majority of patients get into a somnolent state, not so deep as ordinary sleep, in which they answer questions, but appear to have less will power and independence than in the waking state. When in this state Professor Bernheim asserts, with some persistence if need be, that the pain or other affection has gone, and almost invariably the patient accepts his suggestions and awakes free from all symptoms. The explanation which Professor Bernheim gave me of the use of suggesting to the patient that he was asleep was that the symptoms of sleep were easy to call up, they were familiar and natural, and therefore a patient, without possessing very great confidence in the operator's powers, could, with much facility, be made to believe that sleep had come upon him. Whenever the patient has been put into this state his confidence in the operator is immediately strengthened, as he has received a demonstration of his powers, and the subsequent suggestions of the removal of pain &c. are now so much the more easily believed in. In addition to this, in the somnolent state there exists increased suggestibility or *credivity* and less independence of thought, which assists greatly in the giving of suggestions. It will be thus seen that this *rationale* is adopted to develop artificially those conditions which, as we pointed out, seemed essential in the application of psycho-therapeutics. I may add that the ability to induce this somnolent condition can be easily acquired by anyone with tact. It will be noticed that I have not made use of the term "hypnotism" in my description of Professor Bernheim's procedure, for he wishes the whole process to be understood as suggestion and his method known as "Treatment by Suggestion." Van Eeden, at the Congress in London, also pointed out that those who made use of psycho-therapeutics regretted very much its association with hypnotism, which had done it much harm.

The practical uses of suggestion for the cure of disease are innumerable. It is, in the first place, useful for the removal of all states of a painful nature, whether inflammatory, rheumatic, or neuralgic, whether functional or organic. This of itself covers an immense field, and by the removal of pain the most disagreeable symptom of many ailments is cured. The sensation of pain takes place in the cerebral cortex; it is a mental state, it implies consciousness, and hence, by an alteration in our state of consciousness as is induced by psycho-therapeutics, pain caused by cancerous or other organic disease can be as readily cured as functional pain. It may also be used to cure insomnia, chorea, nocturnal enuresis, nervous diarrhœa, irritative coughs, sickness and want of appetite, feelings of breathlessness, and many other unpleasant psychical accompaniments of disease. The removal of these symptoms, it may be said, does not remove the real cause of the disease. This is so far true; but it is certain that the removal of anxiety, and the directing away to healthier channels of the attention, indirectly hasten recovery andb reak one of those vicious circles so common in pathology. The benefit to the patient, as regards comfort alone, is in many cases worth a very great deal, and an important feature of this treatment is that it may be combined with ordinary medicinal treatment, and may even assist drugs in their action. The idea of making use of such procedures as I have described is new to the profession; it is altogether unconventional and different from ordinary orthodox practice, and therefore we expect it to have to fight an uphill battle till recognition takes place. I think, however, it is not worthy of a scientific body like our profession that members of it, usually ignorant of the modern practice of psycho-therapeutics, should make imputations and rash assertions of an unfavourable nature about it and thus intensify the difficulty of a fair trial. Psycho-therapeutics such as I have described can be practised altogether in accordance with the honourable and upright sentiments of the profession, and in a truthful, rational and scientific manner.

In conclusion, it will be noted that, in opposition to Dr. Dale's belief that the scope of the usefulness of psycho-therapeutics is limited, I believe it may be used to alleviate or remove the symptoms of most diseases; that though the instilling of faith and hope is of value in the ultimate recovery, much more immediate and palpable benefit can also be done to the patient by removing unpleasant symptoms; and, finally, whenever any physician has acquired a certain skill in the procedures, his results will be far from disappointing.

"THE ETHICS OF OPIUM AND ALCOHOL."

A REJOINDER.

BY F. J. MOUAT, M.D., LL.D.

IN April last a communication of mine regarding the relative positions of opium and alcohol in their social, commercial, medical and judicial aspects was published in THE LANCET. To this a reply has now been made by Dr. Pringle in THE LANCET of the 10th inst., in which he characterises my statements "as *apparently* authoritative" and deliberately erroneous respecting the single factor of my contention which he refers to—viz., the influence of opium in the causation of the mortality of a few of the prisoners under my administrative control for some fifteen years in Bengal. His chief argument is based upon his failure to find in my official returns a special column for the record of deaths from opium, and he quotes a number of extracts from my official reports of some five of the prisons in Assam, to show that the death-rates in dysentery in that number of the prisons out of the fifty-seven under my charge, were mainly due to opium.

In the first place, he must have known even from his limited experience of the two small prisons of which he was the medical officer that no such column existed, partly because I did not consider it necessary, as I had authority to obtain any medical information I required for administrative purposes from the medical officers attached to the prisons; but chiefly because the purely professional concerns of the gaols under my charge were in the hands of the medical department, which dictated all the forms to be used in furnishing medical returns. An extract from my statistical report for the lustrum 1861-65, pp. 82-3, will show more clearly what I mean. The diseases chiefly influenced by opium were dysentery and diarrhœa.

"The admissions from dysentery, omitting the years 1849, 1850 and 1857, for which there were no returns to the medical department, were 92,935, and the deaths from this number in seventeen years were 8244, giving a ratio of death to sick of 8·87 per cent. and of deaths to average strength of 2·11 per cent. Thus one-fourth at least of the whole mortality was due to this disease alone. The proportion would be greater if the records of the blank years were forthcoming. This lamentable fact points strongly and urgently to the pressing necessity of a thoroughly scientific investigation of gaol dysentery, its causes and consequences. I am afraid that some part of this fearful destruction may have been due to erroneous plans of treatment. Several years ago I found in one gaol every case of scorbutic dysentery treated by mercurial salivation. As might be anticipated, every case so treated died. In another gaol I found the dysenteric patients in the last stage of exhaustion fed with thin arrowroot, which the dying prisoners had to take up with their fingers. Within the last two years I discovered the existence in one of the Assam gaols of grievous malpraxis in the management of this same disease. In each of the instances referred to the matter was mentioned in my reports to the Government. The application of the remedy did not rest with me, as the control of the medical

affairs of the prisons is not and has never been in my hands. The statistics of the treatment of prison diseases are a very necessary part of the application of the numerical method to their study and investigation. The returns of diarrhœa are also deficient for the same years as those of dysentery. In the seventeen years mentioned (1846–1865) there were 64,441 admissions from diarrhœa and 3162 deaths, or in the proportion of 4·90 per cent. of attacked, and 0·81 of strength. This record, again, I believe to be inexact. I have seen cases of advanced phthisis noted as diarrhœa, and examples of œdema and the diarrhœa that ushers in the fatal event, entered under the heading of diarrhœa. More care and exactness in some gaols are wanted in this matter."

Again, I note in another part of the same report that "dysentery is by far the most fatal disease [in the Bengal prisons]. It is essentially scorbutic in character, and depends chiefly upon bad drainage, overcrowding, sleeping within immediate reach of noxious exhalations from the ground in a malarious country, and from breathing an atmosphere poisoned by the exhalations from the bodies of the prisoners themselves. It is much to be regretted that a complete scientific investigation of this form of gaol dysentery has not long since been ordered" (p. 45). "The whole subject of prison diseases, and of this class of gaol diseases in particular [zymotic diseases], demands careful scientific investigation, and I hope will ere long receive it. It is not within the sphere of my functions, or it should have been commenced when the gaols were first placed under my superintendence in 1855. I make this remark in self defence, because the leading medical review of Great Britain (THE LANCET), in noticing one of my reports, taxed me with neglecting the most important of the duties of a medical superintendent—which I am not and have never been" (Report of 1861–66, p. 46).

I did start such an inquiry in the case of cholera in 1855, but the Medical Board of the time objected to my conducting such inquiries, as being their *proper* function, and the government of Bengal yielded to the objection. I need scarcely say that the investigation was not even entered upon by that body of Conscript Fathers. There were doubtless other influences at work in producing the diseases above mentioned, such as changes in diet, different ethic and ethnic peculiarities and habits, and transfers from one district to another, together with all causes of loss of health, such as abuse of alcohol, gunjah, opium and dissipation generally, each of which acted more or less prejudicially on all criminals imprisoned. It would be difficult to me, after the lapse of so many years and in the absence of the original documents from which the returns were compiled, to assign to each its special responsibility. I am satisfied, however, that the least important of them was opium, and even that in a very restricted area and among small bodies of criminals. It was a real *quantité négligeable*. I can vouch absolutely for the correctness of the returns themselves. The medical officers who submitted them were right in not recording predisposing agencies as specific diseases, to the attacks of which they were merely contributory in varying degrees.

As to the insinuation that the corruption of the subordinate agents of the prisons caused the smuggling of opium in such quantities as to exert a prejudicial influence on death-rates, it is the most utter and absolute nonsense. It simply did not occur, for had it done so it must have been known to the officers in charge of the prisons and to myself. This tendency to misrepresentation, and clumsy endeavours to convert facts into fictions and the reverse, are among the most discreditable features of the mischievous anti-opium crusade. The fact, then, that not a single death which could be attributed directly to opium, even as a poison, occurred in the gaols of Bengal among more than 300,000 prisoners, of whom 2404 died from dysentery and 884 from diarrhœa in the five years under review, has not been touched in the smallest degree by the diatribe of Dr. Pringle. His avoidance of the subject of alcohol on the ground of its inapplicability to India is somewhat singular, inasmuch as had he read my remarks more carefully than he appears to have done, he would have found that they applied solely to England.

And now as to the comparative harmlessness of the habitual use in moderation of opium in India, the evidence of those medical officers and have lived for years among the Rajpoots, Sikhs and other warlike and manly native races, is conclusive, and cannot be set aside by any of the questionable exaggerations and mischievous misrepresentations of the rank and file of the army of philanthropists and faddists who have sent troops of young women into the villages to preach a doctrine of suppression and implied immorality of what they can have no right understanding, and have circulated what appears to me to be one of the most mendacious documents I have ever read among the members of the medical profession to secure their signatures to a petition to the Legislature to suppress the cultivation of the poppy in India for any other than medical use, in a form utterly inapplicable to that country. A copy of it was sent to me, and I was surprised to see the name of Dr. Pringle attached to it, for I can only apply to it the scorn expressed by Cicero in one of his orations: "Falsum est in totum, neque solum fictum, sed etiam imperite absurdeque fictum."

Dr. Pringle makes merry over the applicability of the term "pick-me-up" to opium, and the meaning of the word "ethics," which he apparently does not understand. I can give him one crucial example of its sustaining power in those accustomed to its use, which came under my personal observation. I once drove from Patna to Mozufferpore in Behar on duty, and when approaching the latter place came up with a regiment of Sikh infantry which had marched forty miles during the night, had scarcely a straggler, and were as "fresh as paint" at the end of its march. Each man had his small supply of opium with him, and had used it, and could not have undergone this exertion in heavy marching order without it. They had beaten the record of the famous Light Brigade in the Peninsula mentioned in Napier's history for their marching feats.

The remarks of Dr. Pringle on a case of tetanus, and on two or three other incidents of the administration of the prisons in Bengal, are entirely out of place and inapplicable to the subject under consideration, and so need no notice from me.

The etiology of the prison sickness and mortality of the gaols of Bengal is, as I have mentioned above, a very complex question in which opium, fortunately, plays a very insignificant part, and that only in a restricted area and among a small number of criminals—in five prisons out of fifty-seven. I had by a careful study of the matter within the limits of my authority, succeeded during my administration in reducing the death-rate by one-half, by which a saving of about 600 lives annually was effected. As soon as my back was turned the chief measures which I introduced were undone by the next Lieutenant Governor of Bengal, who had a theory of prison discipline of his own, and the immediate result was a return of the old scale of mortality.

It is somewhat singular that the chief portion of my examination for my degree of Doctor of Medicine was on malarious fevers and their treatment by opium, which was at that time the prevailing doctrine and practice. That the same question should have occupied my attention more than half a century afterwards is rare, and certainly gives me some claim to more than an apparent authority on the question under consideration. I have in my official capacity as a professor of medicine both taught and practised medicine in its relations to tropical diseases, and as the first professor of medical jurisprudence in India I have considered the opium question likewise in its medico-legal aspects. Dr. Pringle has been good enough to say that my article on opium has carried more weight with the profession and the public than any of the other writings on the same subject. I venture to think that he has inflicted more damage on his own cause than on my position, and I believe I may safely say to anyone who has taken the trouble to follow up this question, "Utrum horum mavis accipe."

SPONTANEOUS RUPTURE OF THE SPLEEN IN AGUE.

BY JOHN BOWIE, M.B. EDIN.

T——, aged thirty, a cavalry soldier, a tall, strong, finely built man, came out to Africa in the service of an African traveller towards the end of July, 1889. Some years previously he had served in Egypt and in South Africa, but had never suffered from any illness; he had never had fever, dysentery, diarrhœa or syphilis. Some days after coming up to the hills, on August 7th of the same year, he had a slight attack of fever, which lasted only a few hours. About a fortnight afterwards, while on his way to Lake Nyassa, he had another attack of fever lasting only a few hours, a similar attack occurring about eight days afterwards. He was nervous

about himself and had quite a morbid dread of African fever, so he determined to leave the country and immediately start on his way home, to arrive at Blantyre in the Shire Highlands in the last week of September. About a fortnight after his arrival the patient, who had been in excellent health, had a shivering fit and developed an ordinary attack of ague, accompanied by a good deal of vomiting. In the afternoon of the same day I saw him for the first time professionally. He was then suffering from a mild attack of ague, and exhibited no unusual symptoms; the spleen was slightly enlarged on percussion, but could not be felt on palpation; the other organs were normal. The patient was exceedingly anxious about himself and had quite an unusual fear of fever; his face was very pale and his expression of countenance was one of great dread. I reassured him about his condition and left him more comfortable. The following morning he was feeling perfectly well; no fever, pulse good, tongue clean, no pain; the bowels had been moved, and he was up and going about. At 6 P.M. he had another shivering fit, with sickness and vomiting. He at once went to bed and obtained hot-water bottles, blankets &c. About 7 o'clock, and before the hot stage had begun, he complained to his companion of a severe pain at his heart. His attendants thought little of this pain, putting it down to his well-known dread of fever, and did not send for me till early next morning, nearly twelve hours after the attack had commenced. The attendants told me that the man had passed a very bad night and had had no sleep; he was continually retching, occasionally bringing up a little greenish-yellow fluid; had complained of being cold all night, and had sometimes broken out into a cold perspiration. In addition to the pain, as he said, at his heart he had felt pain in the region of the kidneys and had not been able to pass any urine, though expressing a great desire to do so. The bowels had been moved twice, each motion consisting of a little dark-coloured fluid. I found the patient lying slightly propped up in bed, with an anxious and frightened expression of countenance; the face was of a dirty-grey colour, and the features looked rather pinched, but not markedly so; the lips were livid and pale, the eyes were clear, not sunken, and the pupils dilated; the tongue was of fairly good colour, but very dry, with a thin brown coating towards the back part. The patient complained of intense thirst and had been drinking tea almost constantly during the night. I could not get the rectal thermometric temperature, but those parts of the body not in contact with the hot-water bottles were cold. The breathing was thoracic, very short and rapid, averaging over forty to the minute. The patient said he suffered from pain in the left and right hypochondriac regions, which had been present all night and had compelled him to lie on his back, any movement to his right or left side increasing the pain, which was also increased on any attempt to take a deep breath. There was no drawing up of the legs, the patient lying with them fully extended and kicking them about nervously. The pulse could be felt but not counted at the wrist, and on listening over the heart the sounds were very faint and indistinct. The abdomen showed no marked distension; on gentle palpation the walls were found tense above the umbilicus, but below it they were soft and could be readily manipulated without causing any pain. Gentle pressure in the left or right hypochondriac region caused expression of pain, the left side being most tender. Percussion could not be satisfactorily performed. There was no dulness over the bladder, but as the patient complained of a great desire to void urine and of inability to do so, I passed a soft catheter and drew off about an ounce of dark-yellow, slightly turbid urine, which gave a marked precipitate of albumen by the heat and cold nitric acid tests. The patient was quite conscious, his intellect perfectly clear—indeed he seemed to be in a condition of exalted sensibility or "irritable weakness," the slightest touch of a hot-water bottle causing him to cry out; he was nervously restless, continually moving his arms and legs; he knew that he was nervous, as he said that he felt quite hysterical. There was no pain in the head, no singing in the ears, no sighing or yawning respiration. The thirst was most intense. His constant cry was for something to drink. I simply treated the collapse, pain and vomiting, giving him champagne, morphia, hot pack &c. By a little after eight o'clock the retching stopped and the man said he was much easier, the pain being much relieved, the parts, however, still remaining painful on pressure; he was now able to lie on his right side, but lying on the left side always caused a feeling of great oppression. Gradually, however, as the morning wore on, the patient became more anæmic-looking, the lips losing their lividity and becoming very pale; the tongue also began to lose its colour; the abdomen became slightly more distended, though remaining soft below the umbilicus; the pulse gradually lost strength at the wrist and became imperceptible; the thirst became more intense—indeed, I never saw in anyone such a condition of thirst; there was hardly half a minute during the whole six hours I was with him in which he did not beg and pray for drink, though I was continually giving him small quantities of water and moistening his mouth and tongue with slices of fresh lemon. The breathing became quicker. About eleven o'clock he complained of great oppression in the chest—the air, he said, "would not go down." There was still good muscular power, as he could turn readily on his right side, and all his senses were perfectly clear. He was, of course, not allowed to lift his head; but about twelve o'clock he said, "I must get up; I will choke if I lie still." He made an attempt to rise, but immediately fell back and gave a gasp; his eyes rolled and there was a convulsive movement of the whole body, it being for a second or two in a condition of marked opisthotonic contraction; grinding of the teeth ensued, both hands made a grasping movement over the pubis, and after lying faintly gasping for about a minute all was over.

Three hours after death I made an examination of the body. Rigor mortis was well marked in the neck, arms, and hands, beginning in the legs. On opening the abdomen there was a gush of about a pint and a half of dark fluid blood; on gently retracting the walls without disturbing the relation of parts a thick black clot of blood about as large as a cocoanut was seen lying below and to the left of the distended stomach; from this large thick clot there passed a long clot about an inch and a half broad by half an inch thick across the abdomen to the right, ending at the portal fissure of the liver; extending downwards from the large clot was a second thin large clot which passed down the left side into the pelvis. The limitation of the clots was very distinct, none being found in any other situation. On removing the large clot it was found to be in connexion with a rent about four inches in length on the anterior external surface of the spleen. On removing the spleen very carefully (there were no adhesions) and examining it the capsule was found to be clearly separated from the parenchyma for a distance of about two inches on either side of the rent. On grasping the edges of the torn capsule and holding up the organ, it had exactly the appearance of a miniature placenta and membrane, the separated capsule forming a shallow membranous bag, at the foot of which, lying flattened out, was the splenic parenchyma. The parenchyma was neither soft nor diffluent, but rather firmer than normal and of a lighter colour (probably due to compression by the blood effused between the capsule and the parenchyma). The capsule was tolerably tough and could not be readily torn. On cleaning away all the blood clot and blood from the spleen the organ seemed little if at all larger than a normal one. The stomach was distended with a brownish liquid; the intestines were quite empty and collapsed, lying flattened out like gigantic tapeworms. The left side of the heart was entirely empty of blood and the ventricle markedly contracted along the base of both cusps of the mitral valve; on its auricular surface was a row of small firm granulations, the largest being about the size of a pin's head; no thickening or adhesion of the cusps. The right side of the heart was flaccid, the ventricle empty, and a small, partially decolourised clot in the auricle. The kidneys, except for great anæmia and a small cyst at the apex of the right one, appeared perfectly normal.

Remarks.—The special interest in this case seems to me to be the really healthy condition of the patient previously to the fatal rupture. Spontaneous rupture of the spleen is by no means a unique accident, but in almost all the cases in which it has been noted it has occurred either during or following some serious and more or less prolonged blood disease. Thus it has been noted in typhus, typhoid and relapsing fevers, leucocythæmia &c. All these diseases greatly alter the blood and through it the spleen, the substance of that organ having been found in most cases very much softened and sometimes quite diffluent. In malarial fevers the spleen is very early and most markedly affected, but for its tissue to become degenerated or organically altered a certain quantity of the malarial poison and a certain space of time are required. Now the patient had only been a little more than two months in Africa altogether, and of that time more than a month was spent on the hills,

where there can hardly be said to be any malaria; he came into Africa at the very safest season of the year, had been excellently looked after, and had hardly suffered at all from fever; indeed, the gentleman in whose service he was, and who has seen a good deal of African fever, told me that the very slight attacks of fever which the man had previous to my examining him were so mild that he doubted whether they were attacks of fever or of temper. Although we must never forget the very insidious nature of the malarial poison, and how it may thoroughly undermine the system without giving any gross sign of its action, yet we must bear in mind that this slow poisoning only occurs under special conditions, amongst which is a somewhat prolonged stay in a markedly malarial district. In persons whose systems have been thus undermined by the poison rupture of the spleen may be readily caused by any trivial accident, such as a slight blow over the spleen or even by a much less strain, as in a case I heard of where a gentleman ruptured his spleen by vigorously stretching himself after his bath. In all these cases, however, the splenic tissue has been greatly altered—the capsule has lost its toughness and elasticity. Dr. Barrallier gives two cases of rupture of the spleen during first attacks of ague. I have not been able to get his original article, but in one of your contemporaries,[1] where it is quoted, mention is made of both spleens being found softened on post-mortem examination. So I presume the patient had been exposed for some time to the poison or had suffered some days from the fever. Although in most books it is said that the rush of blood to the spleen in cases of malarial fever may be so great as to cause rupture of that organ, yet when we consider the many thousands of cases of ague which occur every day and the exceedingly rare occurrence of rupture I think we may fairly conclude that something more than a mere increased blood pressure is required to trust the very tough and resistant capsule. In most cases this extra factor is found in the degenerated condition of the splenic tissues—a cause, however, which in this case neither the history nor the post-mortem appearances warrant us in accepting. I think an extra factor or predisposing cause might perhaps be found in the utterly depraved condition of the patient's nervous system, as evidenced by the intense anxiety and dread which he showed. Everyone knows the evil influence which great mental worry and an emotional condition exert on the bodily functions, and from time immemorial the spleen has been debited with being specially affected by conditions of anxiety and depression. How far this old belief is correct has yet to be ascertained; but the investigations of Botkin of St. Petersburg, who found that depressing emotions caused an increase in the size of the spleen, give some little scientific support to *τὸν σπλῆνα ἐκβάλλειν* of the ancients. From the extensive and very clear separation of the splenic capsule from the parenchyma it would almost seem as if the hæmorrhage had been first subcapsular (though no varicose or distended veins were found in the substance of spleen post mortem), and that the blood had made room for itself by tearing through the splenic trabeculæ and pressing the parenchyma backwards, the blood gradually increasing and finally rupturing the capsule. As I have noted, the patient experienced a distinct relief from the pain about 8 A.M.; the relief was very decided, and he showed it by his movements. It is very improbable that the morphia—which for want of a reliable subcutaneous solution was given in the form of pills—and the champagne could have any effect, as the stomach could hardly have absorbed them. It is just possible the relief experienced was due to the rupture of the capsule relieving the tension of the pent-up blood. This might also explain the fact that when I first saw the patient, ten hours after the rupture, which I date from the first complaint of pain at the heart, the mucous membranes and tongue were more livid than pale. The amount of liquid which the stomach contained was much greater than the amount the patient had received for at least six hours, and as the intestines were absolutely empty it would seem that the stomach had neither been able to absorb the liquid nor to pass it on to the duodenum for several hours before death. The albuminuria in the little urine drawn off doubtless arose from the damaging of the epithelium of the capillary tufts, which is said to occur whenever a full stream of arterial blood is not kept flowing through them. The symptoms presented an interesting mixture of those of collapse and of hæmorrhage, several of the prominent symptoms of both being wanting and many modified or obscured.

Blantyre, East Central Africa.

[1] Brit. Med. Jour., vol. i. 1891, p. 376.

FRACTURE (DISLOCATION) OF SPINE; REDUCTION; TEMPORARY RECOVERY.

BY W. ARBUTHNOT LANE, M.S., F.R.C.S. ENG.,
ASSISTANT SURGEON TO GUY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN.

W. J——, aged eighteen, was struck in the back by a heavy iron gate, which fell upon him. He was admitted into Guy's Hospital at 1.30 P.M. on June 13th, where he was found to have some deformity of the spine about the tenth and eleventh dorsal vertebræ, between the spinous processes of which a gap of some extent could be felt. He then had apparently complete or nearly complete power over his legs as he lay on his back in bed. By about four o'clock he began to complain of pain in his legs and in the lower part of the abdomen, and when asked to move his legs he did so with much difficulty and but to a slight extent. It was impossible to say how far his inability to perform any movement was due to a loss of control over the muscles or to a disinclination to make any alteration in the position of the limbs owing to a consequent increase in the pain from which he suffered. Probably both conditions existed. As time went on the hyperæsthesia became more marked, and any movement or noise in the vicinity of the bed exaggerated his pain greatly. This was most obvious below the knees. Sensation was at the same time much modified. For instance, pulling a hair of his leg caused him great pain, though he could not tell what had been done. The reflexes were much exaggerated.

Mr. Golding-Bird saw the patient just after his admission, before any of the above symptoms had developed, and in his absence I saw him at 11.30 P.M. As the symptoms were steadily increasing in severity I determined to operate at once. A long incision being made and the spinal muscles having been turned aside, it was found that the tenth dorsal vertebra was displaced forwards and slightly downwards, so that the cord was compressed between the laminæ of the tenth and the body of the eleventh dorsal vertebræ. The displacement was not considerable, so that the cord was apparently squeezed rather than crushed. The interspinous ligament was torn through. As the lower articular processes of the tenth dorsal vertebra lay in front of the upper articular processes of the eleventh dorsal vertebra the latter were cut away. After great difficulty the tenth dorsal vertebra was dragged back into its normal position. This was effected partly by over-extending the dorsal spine and partly by traction exerted upon the spinous process by lion forceps. As on the removal of this traction the displacement recurred, I passed a stout silk ligature between the spinous processes of the ninth and tenth and the eleventh and twelfth dorsal vertebræ, and by that means tied the tenth and eleventh spinous processes immovably together.

On June 14th the symptoms continued as before the operation. On the 15th they diminished slightly but distinctly. On the 16th the improvement continued, but it was still necessary to give morphia to control the hyperæsthesia. By the 21st the hyperæsthesia had disappeared, and he could move his legs a little, apparently without pain. The silk ligature was then removed. By the 26th he appeared to have recovered complete control over his legs. The spinous processes were in good position over the same transverse plane. The reflexes were then normal. The patient was extremely troublesome and restless throughout, and after the wound had apparently healed firmly it broke down, a portion of a spinous process coming away, when the ligature, being useless, was removed. He kept constantly rolling about, and complete paraplegia soon developed. The spine was then explored, when the vertebræ were found to be displaced laterally upon one another and the cord was completely divided. This unfortunate result was due solely to the extremely troublesome character of the patient, a poor half-starved, half-witted creature, whom it was found impossible to control satisfactorily by any means.

The case is one of much interest, and resembles more or

less closely one published by Mr. Golding-Bird last year. It would appear that the symptoms in this case were due to pressure rather than to the presence of hæmorrhage inside the cord. It was evident at the time of the operation that there was no such considerable collection of blood inside the sheath of the dura mater as could produce symptoms of compression, and one was surprised that there was not more paralysis, since the cord appeared to be compressed within narrow limits by the displaced vertebræ.

St. Thomas's-street, S.E.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL AND THERAPEUTICAL.

CONVULSION TREATED BY COMPRESSION OF THE CAROTID.

BY T. GORDON KELLY, M.D. DUB.

IN the issue of THE LANCET of Jan. 2nd I read an account of Dr. Leopold Roheim's treatment of eclampsia by compression of the carotid, and in a subsequent number an account of a case of convulsion where this treatment was successfully tried by Mr. W. C. Hearnden. A similar case occurred in my practice a short time ago, the following notes of which may be of interest.

Mrs. H——, a married woman aged sixty-four, had been under my care for over two years, suffering from chronic rheumatism, renal troubles &c. I had not seen her for some months previously. I rode off immediately, and on my arrival found the patient in a fit which I was told had lasted one hour and a half. The pulse was full, respiration noisy and laboured, and the muscles of her face and body were convulsed. I determined to try Dr. Roheim's treatment. Except for the force with which the carotid was beating, I found this comparatively easy to do, the woman being very thin. Within a few moments from placing my thumb on the artery the convulsions of the face and body began to cease, the respiration gradually became slower and deeper, and in about two minutes and a half she came out of the fit, looked around in a dazed way, and when I asked her if she was better, nodded her head in reply. Since then she has had no return of the attack.

Desford, Leicester.

A CASE OF TETANUS WITH DOUBLE FACIAL PARALYSIS; RECOVERY.

BY W. HUNTINGTON, M.R.C.S. ENG., L.R.C.P. LOND.

J. K——, aged fourteen, farm servant, fell and cut his head on Jan. 4th. The mother covered the wound with stamp plaster, which was allowed to remain adhering for a week. Pus was then observed coming from under the paper, so a poultice was applied and the dressing removed. A day or two after this he complained of stiffness in the jaws and neck, and this increased until the fifteenth day after the injury, when his jaws became firmly locked and he could scarcely swallow. I saw him for the first time on the sixteenth day after the injury. The wound, which had evidently been a badly contused one, was nearly healed, and rather more than an inch in length. It was situated on the forehead, running obliquely upwards and to the left from a little above the root of the nose. He was sitting in a chair and would not lie in a bed, since he found the latter position more irksome and caused worse exacerbations. He could not endure darkness or noise, and required a light all night. His jaws were close together and rigid; masseter, temporal and sterno-mastoid muscles firmly contracted; intellect clear; face expressionless; when asked to smile, he said he could not; nor could he properly close his eyes. There was complete paralysis of muscles of both sides of the face. The pupils reacted to light and accommodation and the movements of the eyes were normal. He suffered from frequent cramps in the legs and abdomen. His arms moved awkwardly, and the grip of the hands was feeble. Dysphagia was a prominent symptom. There was a profuse flow of saliva, which ran out of his mouth; he suffered much from sleeplessness, for many days and nights only obtaining a few minutes' sleep at a time. He was given a mixture of chloral hydrate with bromide of potassium and tincture of hyoscyamus every three hours, and at night he had opium in addition. In a week's time the paralysis on the left side of the face began to subside, and in another week the right side did likewise, and he was then soon able to whistle, smile &c. At first he could not walk, but after a fortnight he could do so with assistance; and his action was peculiar, each leg being moved forward from the hip as if rigid through its length, the foot dragging along the ground. The symptoms gradually subsided, and in six weeks he was practically well and able to go away for a change. A short time ago (June) I saw him, and he was in perfect health.

This case reminds one of the form described by Rose of Zürich, and called by him "cephalic tetanus"; but, so far as I am aware, only one side of the face was paralysed in the cases mentioned. From the dysphagia and irritation caused by noise and movement the term "hydrophobic tetanus," already used to some cases of this disease, would here be an apt one.

St. Andrews, N.B.

THE IMPORTANCE OF OBSTRUCTION TO THE OUTFLOW OF URINE AS A CAUSE OF PUERPERAL ECLAMPSIA.

BY G. E. HALE, M.B., B.C. CANTAB.

THE following brief note concerning a necropsy which I performed a short time ago may be of value to those who, like myself, were interested in Mr. Gifford Nash's paper, published in THE LANCET of Aug. 27th, on the above subject. The girl had died of double pleurisy with a little pneumonia, which had commenced suddenly with a rigor six days before her death. She was pregnant for the first time with a six-months' fœtus. Both ureters from the kidneys to the brim of the pelvis were dilated up to the size of the common iliac artery, while the kidneys were in a condition of slight hydronephrosis, with much congestion of their substance. No obstruction could be found within the canal of the ureters to account for this distension, and the whole condition strongly suggested that the ureters had been obstructed from without by the pressure of the pregnant uterus. The urine during her stay of four days in the hospital was highly albuminous and contained also a trace of deutero-albumose.

St. George's Hospital.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se compare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. BARTHOLOMEW'S HOSPITAL.

OSTEO-SARCOMA OF THE HUMERUS WEIGHING THIRTY-THREE POUNDS AND MEASURING THIRTY-ONE INCHES IN CIRCUMFERENCE; LIGATURE AT THE SUBCLAVIAN ARTERY AND AMPUTATION AT THE SHOULDER-JOINT; RECOVERY.

(Under the care of Mr. HOWARD MARSH.)

THIS case is worthy of being recorded, for the tumour must be one of the largest ever removed with the upper extremity. The history of the case points to the formation of a cartilaginous tumour in the first instance, and after some years the rapid development in that of sarcomatous tissue. Pollet[1] reported last year a case of large osteo-sarcoma of the femur, which was supposed to have been in existence for twenty-five years. The success of an operation for such a large growth as this depends very much on the efficient

[1] Journal des Sciences Médicales de Lille.

control of the hæmorrhage; and Mr. Marsh found ligature of the subclavian most satisfactory, for it appears that the quantity of blood lost did not amount to much more than six ounces.[2] The other methods which are at the disposal of the surgeon for the arrest of hæmorrhage during this amputation are briefly: (1) Pressure on the subclavian; (2) compression of the inferior or anterior flap; (3) ligaturing or twisting of the vessels on the inner aspect of the limb before they are cut; (4) securing the vessels lower down in the Furneaux-Jordan method; (5) the use of an indiarubber band; on account of the liability of this to slip it has been suggested by Kock that a section of the outer third of the clavicle should be made, and after a preliminary bandaging of the arm the tube should be passed round the shoulder and through the gap in the clavicle, loops of bandage being used to hold it in position.

W. H——, aged forty-nine, a labourer, was admitted into St. Bartholomew's Hospital with a tumour of the right upper arm. He stated that ten years previously he noticed the formation of a hard swelling which felt like bone on the front aspect of his arm close to the shoulder-joint. Having in the course of two or three years reached about the size of an orange, the tumour remained stationary for six or seven years. Two years and a half ago the swelling appeared lower down. This increased rapidly, and soon the whole upper arm was enlarged. A year ago the limb measured twenty-five inches in circumference. He had lately lost power and sensation in the forearm, which was now flabby and much wasted. He had lost flesh and strength in the last month, and during this time the swelling had rapidly enlarged. (See engraving.)

The patient presented an extraordinary appearance. It is scarcely an exaggeration to say that his arm looked at first sight almost as big round as his thorax, with which, owing to its bulk, it stood off almost at a right angle. Its circumference at its largest part was thirty-one inches. The forearm by comparison looked small and withered. The tumour was roughly barrel-shaped, irregularly nodulated and bossed, some of the low-crowned nodules being of the size of an orange. The original mass (now as large as a cocoanut) was as hard as bone, while the remainder, which had developed chiefly in the last three years, was for the most part firm or more or less elastic, like a fleshy sub-periosteal sarcoma. The skin over the tumour was tense and shining, pale and waxy, from distension over the upper part, but congested and almost livid lower down. A network of large tortuous veins ramified over the surface, and many of them towards the front of the axilla were as big as adult fingers. No secondary growths could be detected. The tumour was evidently a sub-periosteal sarcoma. The patient's condition was distressing. The tumour had reached such a size and weight that he found it difficult to balance himself as he walked; he was obliged to support the swelling so far as he could with his other hand; he could lie only on his back, suffered considerable pain, looked pale and worn, and was rapidly losing flesh and strength.

On examination it seemed quite possible to remove the arm at the shoulder-joint without any very grave risk to life, for the tumour was engrafted upon the trunk by a somewhat narrow neck, so that the wound left after the amputation would be comparatively small. A few days later the operation was performed. The chief danger, of course, to be guarded against was that of hæmorrhage, not only from the arteries supplying the tumour, but from the enormous veins which were seen running over its surface. To meet this the subclavian artery was first tied in the third part of its course, and the arm was then elevated so as to empty it of its venous blood. The artery lay at a considerable depth from the surface, for the clavicle was forced upwards out of its normal position; but as all the tissues around the vessel were natural it was reached without any great difficulty. When the arm was raised the veins—as no blood was now entering—quickly emptied themselves, and thus the limb was rendered, comparatively speaking, anæmic. A large skin flap was then dissected up from the upper and outer part of the tumour, the joint was opened and the second flap formed by cutting from within outwards. As the afferent vessel had been already tied and the venous blood emptied back into the trunk, the amount of hæmorrhage was quite insignificant and was estimated at the time not to have exceeded six ounces. No case could show more conclusively the value, in amputation at the shoulder-joint for the removal of large tumours, of the preliminary ligation of the main artery of supply and the draining of the veins. The artery in this instance was so deeply placed that—even if the skin and deep fascia had been divided, as originally suggested by Syme—it could not have been securely compressed, for, in the manipulation of the limb which was necessary during the amputation, the thumb or finger would inevitably have been lifted off the artery and fatal hæmorrhage would have occurred. Besides, it is only when the entrance of blood by the main artery has been entirely prevented that the veins can be efficiently emptied. It was suggested by some who saw the case that the subclavian vein, as well as the artery, should be tied. But there were two considerations, which taken together seemed to be conclusive against this course. In the first place, ligature of the subclavian vein must always be a more difficult proceeding than ligature of the artery, and the vessel in this case, owing to displacement of the clavicle, was lying at such a depth that I doubt if it could have been safely reached without removing part of the clavicle. Secondly, to have tied the vein would have prevented the return of venous blood into the trunk; so that instead of saving loss of blood, it would have largely increased it. In the course of the operation it was found that the skin on the axillary side had become so thin over the tumour that it seemed unsafe to leave it. The flaps were therefore too short to entirely close the wound, but the edges were brought together as far as possible, and the surface left open for subsequent granulation was only about three inches square.

The patient bore the operation well, and his subsequent progress was quite favourable. The wound healed aseptically, and the temperature was never above normal. He was up on the tenth day. When seen recently, he looked well and had regained flesh and colour.

[2] Jacobson: The Operations of Surgery, p. 112, 2nd edition.

BRISTOL GENERAL HOSPITAL.

A CASE OF DISLOCATED CALCAREOUS LENS CAUSING SYMPATHETIC IRRITATION; EXCISION.

(Under the care of Mr. CYRIL H. WALKER.)

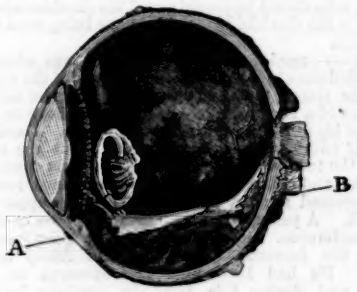
T. F——, aged fifty-five years, came to the Bristol General Hospital on Aug. 21st, 1891, complaining of pain in his left eye and failing sight of his right. In 1857 he appears to have received an injury from a gunshot accident. A single shot struck the lower part of the left eye; the sight was immediately destroyed, and there was some bleeding from the wound. The eye was examined by a medical man, but the shot could not be found. The patient was kept in a darkened room for a few days. The eye rapidly quieted down, and gave

very little pain. In three weeks from the time of the accident the injured eye, though totally blind, was painless and hardly at all disfigured. The eye continued in this condition for nearly thirty-four years, and no information could be gained from him as to whether any opacity had appeared in the pupil indicating changes in the lens. But in April, 1891, four months before admission, the blind eye began to be uncomfortable at times. He stated that soon after this (about the end of June) he was quite sure he felt "the shot rolling about" in his eye. After this the eye gradually became more painful and he repeatedly felt the sensation as of some foreign body rolling about in his eye. On Aug. 13th he noticed that the sight in the right eye, which had hitherto been quite perfect, began to be affected, whilst the left eye became acutely painful.

On admission the left eye was quite blind and extremely painful, the pain extending all round the orbit; the tension was slightly increased. He was constantly mopping the eye with his handkerchief, and in doing so had caused an abrasion of the lower part of his cornea. The rest of the cornea presented a ground-glass appearance, rendering the iris only dimly visible. There was a moderate amount of conjunctival and ciliary injection, and at the lower and inner side, at the posterior part of the ciliary region, there was a small dusky patch, being the scar caused by the wound. So far as could be judged through the hazy cornea, the anterior chamber was deeper than normal; the pupil was moderately contracted and did not respond to light. There was no opacity visible in the pupil. He was still quite confident that he could feel a foreign body rolling about whenever he moved his eye. Atropine and cocaine were applied several times but produced no dilatation of the pupil and no trace of foreign body or lens was visible. The right eye was weak and watery and there was marked photophobia. Distant vision was $\frac{6}{9}$, but he was unable to look at ordinary print for more than a few seconds at a time. Media clear; no ophthalmoscopic changes. The tension was normal, but the globe was decidedly tender. There was hippus of the iris, and he complained of seeing "floating specks." In short, the right eye was in a condition of sympathetic irritation.

Thinking that it was almost certain that there was a foreign body in the left eye, and as it was totally blind and very painful, he was strongly advised to have it removed. This he refused to submit to, so palliative treatment was adopted. After ten days the condition of his eyes remained practically the same, and he willingly consented to have the eye excised. A fortnight later V.R. $= \frac{6}{9}$ and J. 1. The eye was perfectly comfortable, and has remained so up to the present time. The globe measured twenty-two millimetres in transverse diameter. On making a vertical section through the frozen eye the lens was found to be dislocated and remarkably calcareous, being reduced to a skeleton or framework, from the interstices of which all the soft lens matter had been absorbed. It was of nearly normal size and consisted of a fairly uniform outer shell of hard material like egg-shell, with a few radiating clefts and grooves near the periphery, while the interior of the lens was converted into loosely adherent particles or flakes, forming a sort of cancellous structure. (As the globe was not quite frozen through the central part of the lens crumbled away to a great extent and was lost in the fluid vitreous. Hence in the mounted specimen from which the accompanying drawing is made only the concave outer shell is represented.) Examined under the microscope, some of these flakes when decalcified looked rather like bone, but no true bony structure existed. Sections of the decalcified cortex showed lens fibres quite distinctly in many places. No trace of lens capsule or of suspensory ligament was visible. The shot went completely through the eye, entering in the ciliary region (A) and going out a little below the optic nerve. It could not be felt at the time of enucleation, and is probably lodged deep in the tissues of the orbit. From the course taken by the shot it seems likely that it also wounded the optic nerve further back in the orbit, which would account for the total and permanent blindness of the injured eye. The point of its exit from the globe is marked externally by a raised lump (B) close to the optic nerve, consisting of strands of fibres running backwards from the sclerotic. In the track of the shot is a firm, white, glistening band of fibrous tissue, looking much like a piece of tendon, stretching from A to B, and raised about an eighth of an inch from the sclerotic. The retina is detached, and rises up to meet this band on each side, and so forms two shallow pouches or depressions. The small space between the retina and choroid seemed to be full of clear fluid. The detached portion of the retina is much pigmented, so as to present a dark speckled appearance.

There are several points in this case which make it of interest, and the occurrence of distinctive changes in a damaged eye so many years after the infliction of the injury is very unusual. Mr. Walker remarks that although partial calcification of old cataracts is not very uncommon, yet text-books say very little on the subject, and it is hard to find any records of such extensive changes as this case presents. The fact that it also caused sympathetic irritation adds further interest. A rather similar case is related in the *Medical Times and Gazette* of 1853. Dr. Taylor speaks of the condition as being of very rare occurrence. In that case the globe was shrunken, but in spite of this the cataract was extracted, though with great difficulty, and the eye did well. If the patient's statement that the pupil of the injured eye was quite black, and that "no one would know that the eye had been injured," be correct (and he seemed quite certain about this point), the lens must have been almost completely dislocated, gradually become calcareous and eventually broken from its few remaining attachments. It is not easy to explain why a dislocated lens should become calcareous, for though it has been shown (by Mr. Priestley Smith and also by Dr. W. J. Collins) that the amount of solids in a senile cataract depends on the age of the cataract and not on the age of the patient, yet so advanced a change could hardly be accounted for by this ordinary process even in thirty-four years.



Left Eye. Vertical section, × 2. A, Entrance of shot. B, Exit. Half of the dislocated lens is shown in the position it occupies now the specimen is mounted in glycerine jelly.

Reviews and Notices of Books.

SOME GERMAN CLINICAL MANUALS.

Lehrbuch der Auscultation und Percussion. Von Dr. C. GERHARDT. Fünfte Auflage. Tübingen: H. Lapp. 1890.

Lehrbuch der Klinischen Untersuchungs-methoden für die Brust und Unterleibs-organe. Von Dr. PAUL GUTTMANN. Achte Auflage. Berlin: A. Hirschwald. 1892.

Diagnostik der Inneren Krankheiten auf Grund der heutigen Untersuchung-methoden. Von Dr. OSWALD VIERORDT. Dritte Auflage. Leipzig: F. C. W. Vogel. 1892.

Medicinische-klinische Diagnostik: Lehrbuch der Untersuchung-methoden innerer Krankheiten. Von Dr. FELIX WESENER. Berlin: Julius Springer. 1892.

Grundriss der Klinischen Diagnostik. Von Dr. G. KLEMPERER. Dritte Auflage. Berlin: A. Hirschwald. 1892.

THE works named above are for the most part well known. Only one of them is of quite recent date—namely, Dr. Wesener's the rest are new editions, which in every case are said to be improved and extended. Truly, of the multiplication of clinical manuals there is no end. We have only to recall the number of works of this class that have been produced in this country during the past decade to find illustration of this. The student is embarrassed in his choice, but fortunately most of these text-books of the art and science of diagnosis are reliable, differing mainly in the extent to which

the writers descend to detail and intersperse theoretical considerations with their practical teaching. Germany has been even more prolific than England or America in the production of high-class diagnostic manuals, although twenty-five years ago, when Dr. Gerhardt's work first made its appearance as a worthy successor to Skoda's famous Manual of Auscultation, there were but few such books in the field. And within the limits of its subject—limits which the author has increased since he first produced his book—this work of the Berlin professor still maintains a leading place. It is not only thoroughly sound in its teaching, but is comprehensive and original; and although the author in his preface hints that other methods—e.g., microscopical examination of sputa—seem to some to be all-sufficient for diagnosis, few will venture to dispute the necessity for thorough physical examination of the patient if diagnosis is to be accurate, prognosis sound, and treatment rational. As to the general plan and scope of these several works, it may be said that Professor Gerhardt deals in turn with each of the physical methods as applied to the examination of thoracic and abdominal organs, and then discusses in detail the various signs presented by certain morbid conditions of these parts. Dr. Guttmann, whose work was in one of its earlier editions translated by the Sydenham Society, covers the same ground, but embraces in his pages chapters on examination of the larynx, of the blood, sputa, urine &c. Dr. Vierordt's book, recently translated into English (Pentland), is still more complete, treating very fully of the diagnosis of diseases of the nervous system, in addition to the subjects dealt with by Dr. Guttmann. Dr. Wesener's more recent book is of the same scope as Dr. Vierordt's, but is less detailed. It is well illustrated by lithographs, but in the matter of diagrams and woodcuts, many of great excellence, Dr. Vierordt's book takes the palm. Dr. Guttmann's work is not illustrated, but Professor Gerhardt's has several semi-diagrammatic sketches, which are of much utility. Lastly, the little work by Dr. Klemperer, less ambitious than any of the foregoing, is admirably compiled, concise and clear; it traverses the whole field of medical diagnosis and includes all that is really essential. It is just the sort of manual for a student to have constantly by him in his ward work.

In order to give a concrete example of the different modes adopted by these authors of dealing with their subjects we may take, for instance, the much-debated question of the cause of the vesicular murmur, and see how it is treated by each writer. Professor Gerhardt discusses the subject at some length, and traverses the statement originated by Penzoldt, and now most in favour, that the murmur is really tracheal breathing altered by transmission through the spongy lung tissue. He points out that in stenosis of the air passages the sound due to the contraction is conducted to the surface, but does not replace vesicular breathing; that the latter can be heard over the chest in tracheotomised subjects; and that the almost purely inspiratory character of the vesicular murmur contrasts with the greater development of the expiratory portion of the tubular breath sound. From these and other considerations he concludes that the bruit must be produced in the pulmonary tissue itself, not by currents of air or by friction of air against the walls of bronchioles and alveoli, nor even by the combination of the myriad "veines fluides" which theoretically may be conceived to occur where the infundibula open into the air sacs. Dr. Gerhardt holds that the murmur bears the same relation to bronchial or tracheal breathing as the percussion note over lung tissue bears to that over the trachea. In each case there is a similar alteration in pitch, tone and clearness. We may note in passing that several years ago (1886) in these columns Dr. Coats, by his examination of a patient whose larynx had been extirpated, arrived also at the conclusion that the vesicular murmur was generated in the lung tissue itself, and not at the glottis. However, if we turn to Dr. Guttmann we find that, whilst admitting the inherent difficulties of the question, he inclines to the view, which he says has of late come to be generally held, that the larynx is the source of all respiratory murmurs, and that vesicular breathing is only a modified laryngeal sound. It cannot be, he says, that the murmur is produced either by rapidity of the air-current or by eddies produced at the junction of the bronchioles and infundibula. At the same time he sees the difficulty of admitting the glottic origin exclusively, since a feeble vesicular breath sound is to be heard over the lungs of tracheotomised subjects. Drs. Vierordt and Klemperer content themselves by stating the accepted view of the glottic and tracheal origin of the murmur, the latter not hinting at any other explanation; whereas Dr. Vierordt abstains from discussing theories which, he says, have no positive proof to sustain them. Dr. Wesener passes the subject by in silence.

Upon another point—that of the murmurs of mitral stenosis—there is practical unanimity, although there is some divergence in detail, and not one author mentions the view, so much debated in this country on more than one occasion, that these murmurs are really of regurgitant origin. Professor Gerhardt says the characteristic, loud, grating or sawing bruit is diastolic, or more often partly diastolic and partly systolic, commencing towards the end of diastole and prolonged through part of the systole. He notes that sometimes the diastolic element of the bruit is only elicited by increasing the action of the heart; and he explains the fact of the usual late development of the diastolic element by the contraction of the auricle, which comes at the end of the diastolic period, suddenly increasing the swiftness of the current. Dr. Guttmann also sees that the diastolic character of the murmur is due to its being formed by eddies at the contracted orifice; and he notes, as distinguishing it from other diastolic bruits, the fact that it is not uniform, but constituted of two or even three cadences, which pass into one another, the bruit increasing in intensity towards the end of diastole (presystolic period), because then the pressure of the stream on the orifice is suddenly enhanced by the auricular contraction. Of course, he notes the frequent concomitance of a systolic bruit and also the short, loud first sound that may abruptly terminate the stenotic murmur; whilst he says that in some cases a reduplicated second sound is the only evidence of mitral stenosis, a murmur being absent. Dr. Vierordt does not enter into much detail, but gives the accepted view of the character and cause of the presystolic bruit. His diagrams are explicit and accurate. Dr. Wesener says the murmurs of mitral stenosis may be diastolic or presystolic, the latter occupying the second half of the diastole and being of a crescendo character, ending in a loud flapping first sound. Such a bruit is only produced at the mitral valve and is invariable organic, being evoked by the auricular contraction forcing the blood current through the stenosed orifice. He says that there is often (?) a diastolic bruit of uniform character occupying the rest of the diastole and merging in the presystolic, and he correctly adds that the crescendo character of the latter is sometimes wanting—e.g., in cases of fatty heart. Dr. Klemperer merely says that "a diastolic (presystolic) murmur over the mitral valve implies mitral stenosis."

It may also be of interest to learn what these authorities teach upon the significance of intermittent albuminuria, a matter which is still *sub judice*. It is not referred to by Dr. Wesener, and is mentioned by Dr. Vierordt as being of a cyclical character, occurring mostly after exercise, never after a night's rest, and not being accompanied by any other signs of renal disease, especially casts. Dr. Guttmann mentions various authors who have recently drawn attention to this condition of transitory albuminuria in healthy subjects, noting that the albumen is mostly small in quantity, although Leube found as much as 0·03 to 0·06 per cent. Its dependence on muscular exertion is illustrated in the case of soldiers on the

march, in whom the albumen appears in the urine at noon, but not in that passed in the early morning. Depressing emotion may be a cause of the phenomena. Dr. Klemperer says it may occur in healthy young people, and although the idea of nephritis cannot be excluded, yet in several cases it has disappeared. We may remark, in conclusion, that in each of these books the chemical and microscopical aids to diagnosis are treated with sufficient fulness, and that electricity is amply dealt with by Dr. Vierordt, and to a certain extent also by Drs. Wesener and Klemperer.

Manuel d'Ophthalmologie. Par le Docteur E. FUCHS, traduit par le Dr. C. LACOMPTE (de Gand) et Dr. LEPLAT (de Liège). Paris: Georges Carré, Editeur. Pp. 815. 1892.

THIS large and important treatise is a translation of a very well known and highly esteemed work written by the Professor of Ophthalmology in the University of Vienna, and therefore presents the views and practice of that school. Dr. Fuchs states that he was induced to write it because he disapproves of the plan of students taking long notes at lectures, and especially at clinical demonstrations, when they ought to be attending to the objects presented to them; and hence, if they are so anxious to have his very words in black and white, he thought it expedient to let them have them direct and fresh from his own pen. The book does not pretend to be exhaustive, but is a useful guide to the practitioner. Those who intend to take up the diseases of the eye as a special branch of work must, he admits, study the larger treatises.

The general arrangement of the chapters is, in accordance with the usual practice of writers on the diseases of the eye, topographical; the conjunctiva, cornea and sclera, iris, choroid and retina being taken in succession; then the lids, lacrymal apparatus, ocular muscles and affections of the orbit. Errors of refraction and accommodation are next considered and the operations are described in a final section. Following the example of Arlt, Dr. Fuchs devotes much space to the consideration of the diseases of the superficial structures of the eye, as the conjunctiva and cornea. In severe cases of gonorrhœal ophthalmia he recommends scarifications of the conjunctiva and the administration of full doses of mercury internally, with inunction of blue ointment externally—proceedings that are not considered advisable in this country. He adds, however, that he has not had much success with them. Slight cases of pannus resulting from trachoma disappear under the influence of cauterisation of the conjunctiva. In more severe cases he seems to approve of the method suggested by de Wecker of jequirity injections which we thought had been entirely given up even by its author. For fistula of the cornea he recommends rest in bed, a light bandage, the instillation of some myotic remedy and iridectomy. Cauterisation of the edges he thinks to be not without danger. He does not allude to refreshing the edges and the introduction of a suture. Tattooing the cornea in cases of leucoma is recommended to be performed with a fasciculus of needles or with a grooved needle; it should have been observed that the tattoo marks usually disappear quickly unless the punctures are made obliquely. Under the head of Uvea a good description and diagram are given of the lymphatic channels of the eye. Dr. Fuchs only admits a sphincter iridis. The posterior surface of the iris, he says, is formed of strong and regularly arranged fibres, which extend from the ciliary to the pupillary border, and which, on this ground, have been considered to constitute the dilator of the pupil. The dilatation of the pupil, however, is not effected by a muscular contraction but by an elastic retraction, and the fibres in question, having no nuclei, cannot, he thinks, be considered as smooth muscle. The diseases of the iris and of the ciliary region are treated with much fulness and care. A well-written chapter is devoted to the diseases of the optic nerve, commencing with an account of its anatomy, its central origin and the effects of lesion of different parts of the nerve and tract, and passing on to the consideration of intra-ocular and retro-bulbar neuritis. The author arranges the causes of intra-ocular neuritis in the following order: Diseases of the brain and syphilis; acute febrile diseases, such as scarlet fever, measles, small-pox and diphtheria; troubles of nutrition, such as albuminuria, diabetes, scrofula and pregnancy; acute anæmia from hæmorrhage, lead poisoning; heredity; exposure to intense cold; orbital disease, such as tumours and growths in the nerve itself. He gives tobacco amblyopia as the type of chronic retro-bulbar neuritis; but many of the causes of intra-ocular neuritis are also to be enumerated as causes of retro-bulbar neuritis. A section is devoted to visual disturbances without appreciable lesion, which of course includes colour-blindness and which is well written. The illustrations are very creditable, and the translation, though it requires a Frenchman to speak with authority upon this point, seems to convey the sense of the original.

The Biographical Dictionary. Edited by SIDNEY LEE. Vols. XXX. and XXXI. London: Smith, Elder and Co.

THESE volumes compass the letters JO—KE to KE—LA, and include the names of many members of the medical profession, the majority of them, however, being but little known, either personally or by their writings, to the present generation. Dr. C. Handfield Jones and Dr. Bence Jones, however, will be remembered by our readers—the former as physician to St. Mary's Hospital and for his "Clinical Observations on Functional Nervous Disorders"; also as joint author with Dr. Sieveking of a valuable "Manual of Pathological Anatomy." Dr. Bence Jones, physician to St. George's Hospital, devoted his attention chiefly to chemistry in its application to medical research and practice. His work on "Animal Chemistry in relation to Stomach and Renal Diseases" is still esteemed a high authority on the subject. Thomas Johnson, M.D., who died in 1644, was said to be the best herbalist of his time in England. Arthur Johnston, M.D. (A.D. 1587–1641), was more distinguished for his Latin verse than for his medical acquirements. Charles Aston Key (A.D. 1793–1849), surgeon to Guy's Hospital, was famous alike for his lectures and for his operations. He was one of the first elected Fellows of the Royal College of Surgeons of England, and was appointed surgeon to Prince Albert. This Dictionary when finished (it has now reached the twelfth letter of the alphabet) will form an indispensable part of any library which claims to be complete.

THE DUTIES OF WATER COMPANIES.—The East London Water Company were fined 40*s.* at Worship-street Police-court on Wednesday, for neglecting to comply with the requirements of the Public Health Act by not giving notice in writing that a certain house within the limit of their supply had ceased to be supplied with water by the company. The 49th section of the Act (which has only recently come into force) cast upon water companies the duty of giving notice to the sanitary authority of the parish where a house had had the supply of water removed within twenty-four hours.

SANITARY PRECAUTIONS.—Charles J. Smith, owner of lodging-houses in Great White Lion-street, appeared before Mr. Vaughan at Bow-street on Wednesday in answer to summonses by the St. Giles District Board of Works for offending against certain sanitary regulations, principally the non-removal of rubbish. The defendant was conditionally remanded on plea of being away for a holiday. Under the same regulation Henry Edwards, of 535, Fulham-road, was summoned. The medical officer stated that thirty people were living in a house in Betterton-street. The defendant was fined 40*s.* and ordered to put the house in good condition within three days. Two other cases were adjourned for a week and on another a fine of 6*s.* was imposed.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 17, 1892.

ON Aug. 20th we published the report of our Special Commission on Sanitation in relation to the Law and Practice of House-letting. Suspecting not only that sanitary defects were largely prevalent in houses in all parts of the country, but also that the general public were ignorant of the importance of these defects in their relation to health, and that landlords were unable either from lack of knowledge or from interested motives to enlighten the minds of proposing tenants, we submitted a series of questions for opinion to a thousand house agents and surveyors, in the hope that from the information so gained we should be placed in a position to grasp the true facts of the case, and, if we were warranted by the evidence before us, that we might suggest for discussion some method or methods by which existing grievances might be corrected. We were able to affirm in the report that our suspicions had proved but too true, and that the matter was indeed one urgently requiring consideration at the hands of those in whom the authority to interfere is vested. In issuing our report we expressed a hope not only that the matter would arouse the interest of the lay press, and thus aid in the more effectual ventilation of the subject, but also that the conclusions at which we had arrived concerning the means by which the required reform might be attained would be searchingly canvassed; we anticipated, moreover, that possibly important suggestions might be advanced to help us in our task. We are gratified to be able to state that our labours have met with a hearty welcome and our expectations have been amply fulfilled. We now propose to pass in review the more important criticisms and suggestions that have been offered upon our report, but in order to make these clearly intelligible it will be best to briefly recapitulate the conclusions at which we arrived.

We expressed a strong opinion that every landlord should be made responsible for the proper drainage of his house, and that a clause guaranteeing the drainage should form part of the agreement in the letting of a furnished house. It is eminently desirable that this condition should be made applicable to all classes of property, whether let furnished or unfurnished. Starting with the assumption that the efficient drainage of houses should always be guaranteed, we discussed three possible methods by which the interests of the tenant in this matter might be safeguarded—viz. (1) by a combination of house agents and surveyors; (2) by further legislation compelling landlords to put the drains of their houses in order before letting such houses; (3) by awakening sanitary authorities to a sense of the power already entrusted to them, and requiring them to develop their latent authority for the public benefit.

Having for very obvious reasons dismissed the first of these suggestions, we advised the adoption of the third in preference to the second method, by an appeal to existing sanitary Acts, showing clearly that the whole of the requisite authority to carry out the needed reform is already vested in local authorities. We also suggested that recourse should be had to a system of registration of houses with the local authority, who should also grant a certificate to the landlord provided his house attained to the standard of sanitary excellence which they required. We further recommended that registration should, at all events in the first instance, be voluntary and not compulsory, as we were able to adduce instances in which the former plan, having been put into operation, had been found to answer admirably. Of course, should the method prove a failure, the local authority would still have power to introduce more stringent regulations. We suggested an exception to this rule in the case of boarding-houses, lodging-houses and hotels, in which we are of opinion that registration should forthwith be made compulsory. It will of course be borne in mind that the reform for which we are now contending applies solely to the case of houses erected before the passing of the Public Health Acts. Houses built after these Acts have come into force should be drained in accordance with model by-laws drawn up by the local authority. Drains badly laid or not laid in accordance with the scheme set forth in the by-laws are a reproach to the sanitary authority of the district; for these there is no excuse.

Notwithstanding the immense number of notices that have appeared on the report of our Commission, opinion has been nearly unanimous that the case for reform has been established, although some misgivings have been expressed (notably in an appreciative leading article in the columns of *The Times*) about the means which we recommend to be adopted in order to secure it. In urging a system of voluntary registration of houses, we cited Eastbourne as an instance in point where the method had been tried with success; and in this connexion we would direct the attention of our readers to an interesting account furnished by Dr. SHERWOOD and published in another column of the system of registration now in use in that town; and since then we have been informed that a similar plan has been followed at Folkestone with good results. It has been pointed out to us that Eastbourne and other fashionable watering-places are scarcely fair examples to quote in support of our views. It is urged that Eastbourne, being a popular health resort and therefore doing an enormous business in the letting of houses and lodgings, is compelled, in order to attract visitors, to be jealously careful of its sanitary reputation; and it is considered very questionable whether in a place which is not a health resort, and therefore offers no inducement to the local authority to urge upon landlords the prime importance of placing their houses in irreproachable sanitary repair, the certificate of the sanitary authority will be as eagerly coveted and as much respected.

There is certainly no denying the fact that well-known health resorts offer peculiar advantages for carrying out satisfactorily a plan of voluntary registration. To achieve success with a system of voluntary registration in places having a less fluctuating population would doubtless require a far longer time, as it would demand that the public mind should be sufficiently educated to be alive to the importance of insisting on good sanitation and of considering it a duty to taboo

all houses not on the sanitary register. But while we may confidently look forward to the intelligent and well-to-do classes recognising the value of registration within a reasonable time, we are naturally asked how we propose to bring home the importance of the subject to the poorer portion of the community. Would not voluntary registration be a deplorable failure in this respect? To this we answer that some of these houses would be provided for by the Housing of the Working Classes Act. Some, being lodging-houses, would be compulsorily, according to the plan we have proposed, placed upon a special register, while the remainder—if the local authority exercised the power entrusted to them, and intended to be used by them, of thoroughly inspecting drainage—would be most completely cared for. When local authorities awaken out of the slumber with which their eyelids are still heavy, the public may expect to witness the dawn of a new day for sanitary science. The *Local Government Journal* thinks that matters would be expedited by the formation of a householders' league which should have for its object the scheduling of insanitary property in a list open to members only and containing the fullest information regarding the drainage, water-supply, rates &c. of the district. In the event of a system of voluntary registration being instituted, we think that this plan would put a powerful weapon into the hands of householders, and we commend it to their careful consideration.

While an appreciation of the value of voluntary registration would require an education of the public sense, it would be the duty of the public, once having grasped the importance of the subject, to insist on a high standard of excellence being required by the local authority before it grants its certificate. We need hardly say that we consider that this standard should be uniform in all districts employing similar plans of drainage, and that the conditions for its attainment should be laid down by a central authority.

While the majority of our critics have accepted voluntary registration together with compulsory legislation in the case of boarding-houses, lodging-houses and hotels, as sufficient to commence with, the *Daily Chronicle* and the *Star* do not consider that our recommendations have gone far enough, and would make the provisions of the Housing of the Working Classes Act of 1885, which provides that a tenement should be reasonably fit for human habitation before letting, applicable to all classes of property. It would certainly be a boon to the public could this be accomplished; but we venture to think that the Act, if applied unreservedly to such a town as London, would prove a veritable task of Sisyphus. In the first place what is meant by the term "reasonably fit" must be clearly stated. To leave these words to stand without further definition, as at present, would be at once to introduce a bone of contention between landlord and tenant and would inevitably lead to endless litigation. Having laid down the conditions which, when fulfilled, shall be deemed to make a house reasonably fit for human habitation, it is still necessary to bring the law into universal application. Both the *Daily Chronicle* and the *Star* advise recourse to compulsion, mainly on account of the poorer class of tenant, who, having neither the means nor the time to defend himself against the impositions of the landlord, would be obliged to submit to any injustice inflicted on him. We have pointed out above the means by which we think the poor tenant would be protected effectually against the encroachments of the landlord. But let us suppose every kind of household property in London brought under the conditions of the Housing of the Working Classes Act. For the purposes of efficiently carrying out the principle of compulsion each vestry would require to employ a host of sanitary inspectors simply to survey houses and report as to their sanitary condition. When all the houses in the district had been inspected and put in good sanitary repair, an army of inspectors would still have to be maintained to make periodical inspections and correct existing defects; for in the event of any serious flaw in the drainage having been overlooked, the local authority being the only authority empowered to express an opinion as to the fitness of a house for occupation, would also be held the responsible one. We cannot but think that the general application of the Act would prove in the end an impossible task—at all events under the present conditions of local government by vestries; and we are therefore inclined to adhere to our original advice that voluntary registration should first be given a trial.

THE short paper on "Culture and Professional Success" which appears in the current number of the *New Review* from the pen of the late Sir MORELL MACKENZIE raises an issue which is always one of very great practical importance, and which is most pertinent at the present epoch. All educational methods are being subjected to the most stringent scrutiny, and the medical profession has been, and still is, engaged in revising its curricula and extending its period of study. Hence, an article like that cited, raising the great question how far general or "liberal" culture, as contrasted with special, technical, and professional education, is conducive to professional efficiency and success is worthy of careful attention. The article is strongly in favour of a wide general culture as the best preparation for the more special training which every profession demands from those who aspire to enter it. The author's grounds are various, but they may be summed up under two heads: first, that such culture confers breadth and flexibility of mind and renders the acquisition of special knowledge easy; and, secondly, that it develops a knowledge of human nature, and hence assists in enabling us to treat our clients or patients, not as mere "cases," but as complex, sensitive, and highly organised men and women.

This issue, ancient as it is, appears likely again to be fought out in our own day. There is a strong utilitarian wave of opinion now prevalent, and it is becoming generally assumed as an axiom that all training for a profession should be directed to the special needs and work of that profession, and that liberal studies, however pleasant or refining, must, in the stern struggle for existence, make way for subjects more practical and more immediately and obviously useful. From these causes arise the sacrifice of Greek, the limited study of Latin, the ignoring of English literature, and, on the other hand, the concentration of attention upon physical and biological science. We are no advocates of any abortive and anachronistic attempt to turn medical students into classical or literary pedants as a preparation for the work of the hospital ward or the consulting-room; but we would remind those most imbued with the spirit of the new era that the

preparation of the intellect for the reception of knowledge is an object hardly less great and urgent than the character of the knowledge which is to be imparted. We all admit that some such preparation is indispensable. The greatest enthusiast for science will hardly affirm that chemistry, physics and biology afford a sufficient basis for an all-round intellectual development. They are no doubt most important, but their successful prosecution would still leave the student ignorant of the history of his race and of many of the highest and noblest achievements of the human intellect. In medical education we desire, with as little waste of time as possible, to bring trained and disciplined minds to bear on the problems of disease, and the question is in what manner this can be best effected. Many will accept this putting of the case and will ask with derision how the Differential Calculus, the subtleties of Greek grammar, or the Categories of KANT are likely to be helpful. A sneer of this kind, however rhetorically effective, is not conclusive. The medical student needs strength and grasp of mind; the capacity to note resemblances and differences; the power of determining what amount of evidence is sufficient to warrant a given conclusion; some capacity of reading character, so as to estimate correctly a patient's statements and to eliminate the personal equation. He needs to be cautioned against haste, inaccuracy, prejudice and preconceived opinions, fallacious reasoning, confused or contradictory ideas, want of tact and many other things. These are formidable requirements, and the question is whether they can be met by any process less tedious and troublesome than that involved in a good preliminary education. The great danger of medical education at the present day is that raw youths with wholly unformed minds and destitute of any correct ideas regarding observation, evidence, and reasoning, should be set to dissect snails, mussels, and frogs, to look down microscopes, and to handle test-tubes, and come to imagine that little else is necessary. If such methods should extensively prevail, we believe the results would be quite as disastrous as those which flow from an excessive devotion to the Greek digamma or the higher geometry. Cardinal NEWMAN says in one of his works that we have ample proof that the old methods of instruction by means of the classical languages and mathematical studies are capable of producing flexibility and grasp of mind, and that we have no proof that any other methods are adequate for this purpose.

Apart from purely professional work, we have to consider how best we can promote that mental attitude which helps the practitioner to understand his patient not only as the subject of disease but as a human being. In the article alluded to above it is justly observed that professional success depends not only upon the power of giving good advice, but upon the capacity of so influencing our patients that they will be inclined to follow that advice when given. Many of the greatest practitioners of medicine have a magnetic influence in this way; but for those not thus exceptionally endowed there is no means of acquiring this power so likely to be successful as a wide knowledge of different subjects—in other words, a good all-round culture. This should enable its possessor to understand different types of mind, to enter into their point of view, and to sympathise with their various difficulties and apprehensions.

We may ask, finally, why so deep a prejudice should exist against the higher culture as a preparation for the professions. We believe the answer given in the paper in the *New Review* is the correct one—viz., that in some cases liberal culture disinclines the mind to devote itself heartily to what are often the dreary details of technical professional knowledge. We are reminded that Sir BENJAMIN BRODIE acknowledged that, nourished as he had been on classical literature, he had great difficulty in bending his mind to the dry details of anatomy. His subsequent greatness is the answer to those who maintain that literary culture is a hindrance to scientific eminence and professional success.

BY the death of Sir GEORGE MACLEOD, recorded in the Obituary column of THE LANCET of last week, Scotland has lost a representative of medical and surgical science who combined all the qualities that make the beloved physician or surgeon, or say rather the beloved practitioner of the healing art, in more than an ordinary degree. Glasgow, his native city, has to mourn its loss in a special sense. Glasgow is a city that has responded well to its motto, "Let Glasgow flourish," and in nothing more than its medical celebrities. CULLEN led the way, BLACK followed, and since their time there have always been one or more men of mark—at least in physic—in that city. That she has often maintained three schools of medicine in brilliant contest one with another is of itself good evidence of medical fame. Sir GEORGE MACLEOD represented as a professor two of these schools—Anderson's College and the College or ancient University, a position which the late Professors ANDREW BUCHANAN, EASTON and LAWRIE held before him; for Anderson's College was not merely the nursing mother but also the rival of the older and greater institution. In the College Sir GEORGE MACLEOD occupied the chair of Surgery, succeeding Professor LAWRIE, who was in turn successor of the famous Professor JOHN BURNS, the author of one of the most practical treatises on Midwifery the profession ever possessed. These three professors of surgery in the old University had their own and distinctive qualities of fitness. Professor BURNS was of the old school. He commenced practice in the Saltmarket, and did not disdain in his first days to keep what he afterwards called "a conspicuous surgery," the shutters of which he would, on emergency, put up "wi' his ain hands," and, respecting practice, then and there told afterwards to his admiring classes many a good story. He dressed to the last in the old courtly style and carried it splendidly: knee breeches, buckle shoon, long waistcoat, with open front and flowing shirt frill, and coat like that still worn by Queen's counsel—a truly becoming attire. His classes in the College after he became possessed of the surgical chair were crowded, until his successor Professor LAWRIE began to teach at Anderson's College, when the attendance faded a little. He was a quaint lecturer, and his faithful janitor, "Jock," a marked favourite with the students, and ever at hand during lecture, was literally a worshipper, who from long familiarity with his duties looked on himself as a kind of sub-professor who need not hesitate to speak out an occasional drollery that passed as "Jock's last," long before Mr. GANDER attained the same celebrity. Professor BURNS was lost in shipwreck on board the ill-fated *Orion*, a fine

steamer that ran between Liverpool and Glasgow before the direct railway communication from London to North Britain was opened, and was found, it was reputed, on his knees dead. There is an excellent picture of him, in the act of lecturing, which his old friends and pupils dearly prize. Professor LAWRIE was a man of different stamp, a bright, active man absorbed altogether in his professional work, thinking of surgery and the doings of surgery from morning to night. He was a perfect operator. DE MÉRIC, who studied under him, and who afterwards for so many years conducted the Mirror of Hospital Practice for THE LANCET, said of him in his French way that he operated "avec la rapidité d'éclair"; and Sir WM. FERGUSSON always spoke of his skill in terms of warmest admiration. He was an excellent teacher too, and his transference from Anderson's College to the University was as much regretted by the one school as it was hailed by the other. Sir GEORGE MACLEOD won his spurs also in Anderson's College, as already told, and was indeed a noble successor both of Professors BURNS and LAWRIE. He had the great advantage—and it is a great advantage—of comeliness of person; he was above the ordinary height, and his features, essentially Scottish, were at once manly and refined. His manner was exquisitely winning, his claims to distinction modest, his judgment sound, his mode of deliverance, either by pen or speech, free, generous, thoughtful, guileless; yet there was humour in his eye and keen sense of humour in his mind. A letter which lies before us, written but a few weeks prior to his death, carries with it the whole man in all his sweet simplicity and all his strength. It was an answer to a question bearing on art. It opened with a confession of his own inability, but proceeds with his ideas, nevertheless, so plainly and strongly expressed as to carry complete conviction. It showed a strong man who did not realise his own strength. That throughout was the true nature of a man whom to have known in life was a privilege, and whom to remember in death is a privilege also, triumphing over sorrow—the remembrance of a good and great spirit now unconfined, yet ever living in the hearts of those survivors who knew his sterling wisdom, work and worth.

THANKS to the energy and efficiency of Dr. THORNE THORNE and of the other officials of the Local Government Board and of the medical officers of health of our seaport towns, we in this country are in a position to consider the cholera question more or less dispassionately. In consequence of the practical application of principles based on the outcome of scientific observation, we may in Great Britain and Ireland, if not in our Indian dependencies, consider it from the localised or isolated etiological rather than from the epidemiological point of view. Most European countries, indeed, are so far removed from those centres in which cholera is endemic, and the conditions during a great part of the year are so unfavourable to the development of cholera that we should be able, by turning our attention at once to the etiological factor and by carefully studying the conditions of isolated infection, to stamp out cholera before it has the opportunity of laying hold of a sufficiently large number of victims to entitle any outbreak to the serious title of "epidemic."

If the present outbreak on the Continent has afforded evidence of nothing else, it has proved that the ultimate causal agent of cholera is an organism which is capable of multiplying rapidly under certain definite conditions, but which under other conditions is very readily rendered impotent. Considering this etiological as distinct from the epidemiological factor, our sanitarians have succeeded in dealing with cholera just in proportion as they have, conscientiously or unconscientiously, recognised its importance. KOCH'S cholera or "comma" bacillus is said to thrive almost exclusively in the intestine, into the walls of which it seldom passes deeply, and though present in the stools in enormous numbers, especially during the "rice-water" period, it does not make its way into other parts of the body, even when it is thriving most luxuriantly. Under normal conditions of the intestine this organism is so easily destroyed that it may be safely affirmed that unless enormous quantities are introduced by the mouth a perfectly healthy mucous membrane is quite able to deal with it. Where, however, as in the case of intestinal disturbances, as the result of indigestible food, fear, debauchery, or other depressing influences, or, it may be, as the result of the introduction of a quantity of the cholera toxines along with the organism itself, the mucous membrane becomes injured and its functions impaired, the organism is enabled to multiply, to produce its toxines, to cause inflammation of the mucous membrane, through which it is enabled to obtain those products of inflammation on which it seems specially to thrive and from which it is able to produce its toxines in large quantities. It will be objected that it is a simple matter to make such sweeping assertions, but that it is not so easy to bring forward evidence of their accuracy. Let us see what evidence there is in support of this contention. In the first place VIRCHOW, who has kept a most open mind on these questions and who has recently been studying the question in Russia, maintains that cholera does not spread through the air and that meteorological conditions have little to do directly with cases of individual infection. He holds that the disease spreads mainly, if not entirely, through the agency of the evacuations of patients already suffering from cholera. If this be so we must be dealing with a substance that is capable of being reproduced at an enormous rate, and, so far as we know at present, there is nothing that can be so reproduced except the living ferment-producing organisms of which the "comma" bacillus is an example. That these "comma" bacilli do multiply at an enormous rate has been demonstrated time after time by numerous observers, whilst it has also been proved that under certain conditions they are capable of producing symptoms in animals which are only comparable with those of cholera in man.

HUEPPE, reporting on the Hamburg water-supply, pointed out that the consumption of the water, which contained a considerable quantity of sewage matter, would under ordinary circumstances be accompanied by no untoward results, but that should typhoid or cholera organisms find their way into this water there would undoubtedly be a most serious outbreak. Typhoid fever in such places as Hamburg may be said to be almost endemic, but cholera only makes its appearance when the specific poison is imported. When it is imported, however, all the conditions necessary for the multiplication of the pathogenic agent are so favourable and the means of conveying it to the inhabitants are so well adapted to the purpose that the spread

of the disease goes on with the utmost regularity and the most appalling fatality. As one of our Special Sanitary Commissioners pointed out last week, the well water in Jumet is contaminated with drainage from the middens, and is thus rendered not only a most favourable nidus for the growth of the cholera organism, but should any of the dejecta from the cholera patients remain unsterilised and be thrown on these middens, access to the wells, especially in rainy weather, is merely the matter of a few hours, and in this way there may occur a regular outbreak around a single case, perhaps imported from a distance. In Antwerp the first patients who were attacked in the present outbreak were those who were engaged in washing the clothes of cholera patients or who helped to unload cholera-stricken vessels, and who had therefore ample opportunities of coming in contact with the cholera-producing poison. Many cholera outbreaks have thus been traced, just as we have been able to trace typhoid fever, from definite centres, and always with the result that the theory of a bactericidal causal agent has been further and further strengthened. Since such agency has been recognised the means of preventing the spread of cholera and similar diseases have been thoroughly systematised by our sanitary officials and are now founded on a practical and satisfactory basis.

Dr. CARTWRIGHT WOOD pointed out some time ago that there was much greater likelihood of successfully combating the cholera organism immediately after it was passed with the dejecta than when it had been allowed to multiply aerobically, seeing that after a time it becomes much more resistant to the action of chemical and other reagents, and, consequently, is in a better position to attack those brought in contact with it. It can under such conditions more readily withstand the acidity of the stomach, and thus has a greater chance of passing into the lower part of the intestinal canal. The excreta of cholera patients, if treated at once with even a weak solution of sulphate of iron, are rendered absolutely inert, the organisms are destroyed, and the toxines formed can do little harm; if, however, even small quantities of dejecta are allowed to remain on damp sheets or body linen, the organism can multiply with such extraordinary rapidity and becomes so far adapted to its new surroundings that it is enabled to flourish on the various foods used by man, and thus, carried on the hands of those who have to wash the linen, distributed by the water in which the linen has been washed, or conveyed by articles of diet, it is widely disseminated. If these facts are borne in mind it is at once seen how utterly illogical and short-sighted are quarantine regulations of all kinds. People in quarantine are extremely liable to take the disease, and thus to form fresh centres; they are depressed and are often badly lodged; they are deprived of sleep, and even of sufficient nutriment to keep up their health and strength; they are not allowed to take exercise; and they are herded together in places not adapted for the reception of large numbers of people. In fact, all the conditions of a Mecca pilgrimage are reproduced on a small scale. The system is radically bad. All those actually attacked with cholera should be immediately isolated, carefully nursed in hospitals or apartments so arranged that thorough disinfection of everything coming in contact with the patient may be carried on; the body linen should be carefully boiled immediately it is removed, and the dejecta should be mixed with, or passed into, a solution of sulphate of iron, which is probably the very best disinfectant for the purpose. Of course all those who have been or are near cholera patients should also have their physical welfare carefully attended to; they should be watched and compelled to have everything that could have come in contact with cholera patients carefully disinfected. If we could only look upon a cholera patient as covered with and evacuating a deadly green paint, we might have some chance of getting people to realise the importance of isolation and perfect cleanliness and disinfection. We need not fear any great outbreak of cholera in this country during the present year, or even next year, should the admirable precautions that have been taken be persevered with—as no doubt they will be, for no false security is likely to lay hold of our authorities, who now understand so well the idiosyncrasies of cholera. We ought to be, we venture to think, practically safe against any epidemic.

The difference between our system and the quarantine system used abroad has now experienced a severe test, and it is to be hoped that no such disgraceful panic will ever seize us as that which appears to have for a time obliterated all feelings of humanity in our American cousins. The lamentable state of matters that developed and remained in existence for a short time on the other side of the Atlantic indicates only too clearly that, with all our boasted advances in sanitary matters, some of those in authority have still utterly failed to grasp the very elements of sanitation and its relation to the etiology of cholera.

Annotations.

"Ne quid nimis."

AMERICAN AND ENGLISH METHODS OF PREVENTING CHOLERA.

"THE quarantine war at Fire Island continues, hitherto happily without bloodshed." Such is the telegraphic communication with which the cholera intelligence in the public press opened on the 14th inst. Happily, too, for us, the quarantine war in question is going on in the United States of America and not in the United Kingdom of Great Britain and Ireland. It has for many years past been one of the leading contentions of our public health authorities that it was necessary to an efficient sanitary administration that the people should be educated, by the aid of sound sanitary laws and regulations, to such a standard that they themselves would appreciate the importance of maintaining and enforcing those laws and regulations. And we have always contended that teaching a people to rely on quarantine laws had again and again led those very people not to trust in public health measures, but to rely on the stringency of their quarantine laws for their protection. It is also a matter of common report that Governments trusting in such laws have not dared, in the face of the public opinion which they had educated up to the required standard, to do otherwise than enforce their quarantine laws by the aid of the sword, bullet and bayonet, regardless of the cruelties which the system involved. But, notwithstanding all this, we were hardly prepared for the scenes with which American quarantine against cholera has been accompanied at Fire Island within the New York jurisdiction. American sani-

tarians have, we know, contended for a modified quarantine system, and we would not pretend for one moment that a system such as we have adopted for our island, with its incessant communications by sea with neighbouring countries, is one that is adapted, without notification, to distant ports and countries such as those of the western hemisphere. It is for American experts to advise their Government and countrymen as to what are the measures of prevention against cholera which are best adapted, under their own circumstances of public health, commerce &c., to cope with the disease. But we are none the less convinced that the more a nation is educated to rely on quarantine, the more it becomes demoralised from a public health point of view. In the eastern hemisphere the quarantining nations are the backward nations, whose populations have suffered most from preventable diseases, including cholera; and both the folly of their practices and the amount of their preventable disease are largely increased by the extent to which quarantine restrictions have been held up to their people as things to be trusted in. The United States have made vast progress in public health, some of their advisers are men of the highest eminence, and it may be that some system of quarantine is that which will best meet the possible importation and diffusion of cholera in the case of their country. But, however this may be, its educational effect is of the worst. If healthy people are, in the eyes of the Government, such a danger to a community because they come from an infected port, or because cholera has occurred on board the ships in which they travel, that they must be kept away for ten or twenty days, although this may involve the greatest cruelties, indecencies and danger of death, then why complain of the action of people such as those who, in the Fire Island case, armed themselves with clubs, pistols, boat-hooks and rifles, and were deaf to the entreaties, tears and pleadings of helpless women and children, who, though healthy, had been labeled by the quarantine system as dangerous? In this country we have been trying hard to educate the nation to a higher standard—namely, to understand that quarantine cannot be trusted to keep out cholera, but that purity of the water consumed, of the air breathed and of the soil can and do prevent the extension of the disease. But, as we pointed out last week, even some of our sanitary authorities are clamouring for quarantine and are thus trying to lead the public back to experiences which savour rather of the middle ages than of the Victorian era of public health administration. They may plead that Englishmen may be trusted not to behave as did the mob in the Fire Island case. But here, we fear, they are wrong. Prejudice, ignorance and fear have led to almost precisely the same results in our own country, and the moment we revert to quarantine at that moment will there be endless attempts to get ashore in violation of the quarantine regulations rather than remain on board an infected vessel, and with these attempts will come determined and violent efforts to frustrate them; and not only so, but such efforts would have some justification, for they would be in the direction indicated by the Government which had authorised a reversion to the ancient, useless and cruel system known as "quarantine." We would urge people who are thus pressing the Government to read again the intelligence from Fire Island, and also note that the practical outcome of the New York quarantine system is an announcement on the authority of the Board of Health that five cases of genuine Asiatic cholera have already occurred in New York.

CIALDINI, SURGEON AND PATRIOT.

AMONG the obituary notices of this most distinguished of Italy's patriot-generals we fail to find adequate reference to the fact that his training was that of a physician and surgeon, and that he graduated in medicine at the University of Paris. The son of a Modenese engineer, he studied "philosophy" (which corresponds to our arts curriculum) at Parma, and thereafter entered on the medical course at that school. This was interrupted by the revolution in the Romagna in 1831, in which he took the national side, till, after its suppression by Austria, he fled to Paris, where he again threw himself with ardour into medical study. He was a sedulous and devoted pupil of the great surgeons Dupuytren, Lisfranc and Rostan, and in their respective cliniques drew in an inspiration and a knowledge that stood him in admirable stead throughout his later and most eventful career. In 1848 he joined the national rising in Lombardy, fought under General Ferrari in the Venetian territory, and, having been promoted to the rank of colonel, took part in the battle of Vicenza, where, severely wounded in the abdomen, he fell into the hands of the Austrians. He recovered consciousness in the wards of a military hospital, and his accurate knowledge of the nature, seat and probable course of his very dangerous wound, and the respect he inspired in his surgical attendants for his suggestions as to treatment, contributed to his rapid and complete recovery. His future achievements in the Crimea, in the campaigns against Austria in 1859, against the Papal and Neapolitan armies in 1860, and against Austria once more in 1866 belong to the history of Europe, and will be amply dealt with in his romantically interesting "Life and Correspondence," shortly to see the light. It is more to our present purpose to draw attention to the fact that of all the liberal professions medicine contributed most to the really effective "makers of united Italy." In the patriotic risings of 1821, 1831, 1848 and 1859–60 there was not a medical school in the Peninsula which did not swell the nationalist forces with contingents more numerous by far than the contemporary schools either of literature or law. In the Parliamentary career, moreover, to which such patriotic service led up, medicine once more came honourably to the front. We need only point to Lanza, the practitioner of Casal-Montferrato, who, once and again Prime Minister, conducted Italy to Rome; or to Bertani, the head of Garibaldi's surgical staff, to whom Italy owes the "Codice Sanitario" now being carried so beneficently into practice, to absolve ourselves from further entrance on a field already amply represented in these columns.

MEDICINE AND THE ORIENTALIST CONGRESS.

THE ninth Congress of Orientalists, which has just concluded its sittings, yielded, except in one important department, to none of its predecessors in variety and depth of interest. The keynote struck in the brilliant opening address of Professor Max Müller, its president, was—again we must say with one exception—worthily sustained through all the sections. "The science of language," said the President, "the science of mythology, the science of religion, ay, the science of thought, all have assumed a new aspect, chiefly through the discoveries of Oriental scholars, who have put facts in the place of theories and displayed before us the historical development of the human race as a worthy rival of the natural development of nations displayed before our eyes by the genius and patient industry of Darwin." To this great stream of inductive truth there were many tributaries, represented in the several departments of anthropology, mythology, geography and the cognate sciences, and embodied in papers of original or independent investigation, each containing its element or actual product of fresh knowledge or "working hypothesis." But, strange to say, the science that is perhaps the most ancient of all, coeval and coextensive with mankind—the science that reflects in its successive stages, whether of advance, revolution or retrogression, the contemporary standpoint, moral and intellectual, of the human race—was completely ignored. And yet it could be for no want of subject matter, still debatable or yet to be explorde,

that the history of the healing art in the East was practically a sealed book at the Orientalist Congress. Egypt alone teems with problems of medico-historical interest the solution of which must shed the most vivid light on that humanistic development of which Professor Max Müller so eloquently speaks. The Papyrus Ebers has by no means pronounced the last word on Egyptian medicine—on the practitioners of the people of whom Homer said "they are of Pæon's race and each man of them is a physician." The healing art of the Indians also literally bristles with unsolved questions, containing in their solution the key to much of the Hindoo civilisation. Take, for instance, the Brahmanic period, with its two great medical authors, Charaka and Susruta. The "Ayur-Veda" (Book of Life) of the latter is still subject matter of the keenest controversy as to its real date. Was it written, as some Sanscrit scholars maintain, many centuries before Christ, or did it first appear, as others contend, between the eighth and ninth centuries of our own era? The explanation of this disparity of estimate may possibly lie in the fact that the book itself contains parts of very various antiquity—the poetic parts being ancient, the prosaic parts, representing later commentary, being comparatively modern. Again, was Indian medicine an indigenous product or was it an importation from without? Is Haas, the latest and not the least competent investigator in this field, entitled to say that Indian medicine is but a derivative from the Greek? Is the same scholar right when he supports his position by referring the name "Susruta" itself to "Bukrat," which is but a form of "Hippocrates"? Questions these of the deepest interest in themselves, but of interest still deeper in the light their solution would throw on the historical development of Eastern humanity—on that Oriental civilisation, in fact, of which its medical theory and practice were at once the characteristic outcome and the distinctive feature. We have on previous occasions indicated what the world's knowledge of Chinese medicine owes—still more what it may yet owe—to our medical missionaries. But in this field, as in those of India and Egypt, the sections at the last Orientalist Congress were disappointingly silent. A dip into any history of medicine, from Puccinotti to Haeser and Puschmann, will afford in the poverty of detail, in the wealth of hypothesis as to the healing art of those nations, the proof of how little Oriental scholarship has done for this most interesting section of its subject matter. There was hardly a profession or body of culture, except one, which could not glean something of special, we might say of individual, interest from the proceedings of the late Orientalist Congress. That one was the medical, which has yet, as we have shown, its particular contribution to make—a contribution second in importance to none of those so well and so amply represented in the sections. Let us hope that at their next meeting the Orientalists will have, on the medical side, a better record to show, and that in England at least there are still to be found successors to Prichard, to Turnour and to Wise.

ARE MIRACLES UNNATURAL?

SOME time has elapsed since the outside world, inhabited by most of mankind, was stirred by details of the striking cures reported to have occurred at Lourdes. We do not intend, or even desire, to dispute the reality of many if not all such, though we may be allowed to question the veracity of even official reports concerning them. It is, however, we consider, a most unfortunate fact that the minds of so many persons are unable to regard occurrences of this kind as other than subversions of the law of nature. The mere phrase is in itself destructive of all rational ideas on the subject and introduces doubts, difficulties and disunion among the relations of the physical and spiritual worlds which a multitude of other circumstances show to be similar, and consanguine parts of the same Creator's handiwork. It implies no discredit to the character of religion and no reduction of their own marvellous reality that miracles should be found capable of natural explanation. The marvel of success remains as great as ever—nay, is enhanced by the wonder of simplicity disclosed in its method, while faith in what was once a mere dogma becomes both purer and stronger when that dogma is shown to be consistent with the rest of the universal order. The "miracles" which in our day attract, not unreasonably, the devout in this and other countries are neither novel nor irregular. Such happen daily in the experience of practitioners. The performance of some has even the shroud of mystery still about it, while it answers to the tests of scientific treatment. Others are more manifest. Still, as of old, "the blind receive their sight, the lame walk, the lepers are cleansed, the deaf hear"—nay, some who to all appearance have trespassed for a brief space within the boundary line of death return to earthly duties, and we know something of "how and why." Should we, then, regard miracles as opposed to the law of nature, and not rather as facts illustrative of that law, and though once unknown to us never unknowable, and always related in the presiding Mind of the universe with reason, will and order?

PTOMAINE POISONING AND SUMMER INDIGESTION.

TOXIC alkaloids as the cause of many cases of accidental poisoning have come into prominence of late years, and every summer instances of ptomaine poisoning are reported. An interesting article on this subject appears in the *Boston Medical and Surgical Journal* of August 4th. Much remains to be discovered relative to the kinds of ptomaines that may develop in both animal and vegetable substances out of the body, as well as of the toxines that may form in food after its ingestion. Doubtless the possibilities of ptomaine formation are very great, and under unusual conditions of insalubrity—hot, damp weather, sewage emanations &c.—the work of decomposition may go on with extraordinary rapidity, and, under the influence of microbes, toxalbumens of great power may form in food that to the eye and taste is still wholesome. There is accumulative evidence to show that this is so. At the same time every investigator of the subject is confronted by the fact that meats that have undergone partial decomposition are not necessarily unwholesome or toxic, for some savage tribes, as the Patagonians and Fiji Islanders, habitually eat putrid meat that is swarming with bacteria. From our present standpoint of enlightenment, as to the development of toxines during processes of putrefaction, we cannot well understand such facts. It must, however, be borne in mind that robust, healthy stomachs are very tolerant of foods which under circumstances of enfeeblement of the digestive tract would cause sickness, that the digestive fluids are more or less destructive to microbes, and that the liver when in a healthy state is capable of destroying considerable quantities of poisonous substances. Cases of poisoning by food of a relatively innocuous character are not uncommon. Some portion of the ingesta becomes an irritant poison, a fit of indigestion ensues, and often the offending substance is speedily expelled by vomiting. The matter of idiosyncrasy need not detain us here; it is known that certain articles of diet, such as cheese and shell-fish, are toxic to some persons. Generally the state of the alimentary canal at the time is responsible. The most common and best known of the various forms of indigestion is that in which, from the absence or the deficiency of gastric juice and other digestive fluids, the alimentary bolus becomes a gastro-intestinal irritant, provoking vomiting, purging and a catarrhal condition of the digestive tract. A second stage in the process of acute indigestion arises from the presence of abnormal fermentations and decompositions in the alimentary canal.

The food substances, under the influence of bacteria unrestrained by the antiseptic digestive fluids, break up into organic acids and alkaloidal products of a lower order, which are in part absorbed and produce constitutional disturbances. This stage borders very closely on that of ptomaine formation. There is good reason to regard cholera nostras and the gastro-intestinal catarrh of infants as kinds of ptomaine poisoning due to multiple causes, of which weakening of the alimentary canal and consequent poverty of digestive fluids, the ingestion of food of an indigestible character, the putrefactive decomposition of the latter under the influence of microbes, and the formation of toxines are the principal factors. That a considerable number of persons may simultaneously be attacked with sickness after a large meal owing to the influence of causes such as have been above mentioned cannot be a matter of serious doubt. Similar conditions of faulty hygiene produce, in individuals with similar organic susceptibility, results essentially the same. A remarkable case of this kind occurred in America on July 23rd of this year. Out of a total of seventy persons who dined together, about fifteen became more or less violently ill within a few hours, exhibiting the symptoms of cholera nostras. The general opinion, as advanced by the physicians who had opportunities of studying the facts, is that the sufferers were persons who had eaten rather immoderately of indigestible dishes; that the hot weather, the bad air and bad water of the place coöperated in bringing about the necessary predisposition in the guests, and that therefore what is now known as the "Salisbury sickness" (from the name of the place where the banquet was held) was a local and limited epidemic of cholera nostras.

A CASE OF CHARBON.

AN inquest was held at St. Pancras Coroner's Court on Saturday last on the body of an engine-driver employed by some horse slaughterers near King's Cross, who died in the Royal Free Hospital on the previous Wednesday. The source of the disease cannot be traced, for although the man worked at the horse slaughterers', and they deal with all kinds of diseased animals, they are sent from various parts of England and the deceased did not in the course of his employment have to touch any of the animals, having to attend solely to the engine. No other instance of the disease is known to have occurred amongst the other men employed at the establishment for the last year. The history of the case was that on Sept. 4th a small boil formed on the right cheek, which the patient scratched; the next day the boil was somewhat larger, and on the 6th there was a superficial sore, with swelling of the neck, and he felt ill. On the 7th he was admitted to the hospital, under the care of Mr. Battle, with a superficial sore about the size of a florin, surrounded by a ring of minute vesicles. The cheek and right side of the neck were occupied by a large puffy swelling extending from the sore. The temperature was raised (101°), pulse quick, and the man looked ill and had dyspnœa with noisy laryngeal respiration. Coma rapidly supervened, with loud, brassy stertor. Anthrax bacilli were found in the serum taken from the vesicles and the sore was excised, but without benefit. Petechiæ were present along the inner side of the arms, and the glands on the right side of the neck were enlarged and tender. He died at 1 o'clock next morning. At the post-mortem examination made by Mr. Farmer the usual appearances noted in patients who have died from anthrax were found; but in addition it was observed that extensive general hæmorrhage had taken place in the meninges of the brain, and over the left occipital lobe was a clot, about the size of a walnut, compressing the convolutions. There was a small amount of clotted blood also in the lateral ventricles and in the fourth ventricle. The sore presented no central dark slough, and there was no surrounding redness. In these points and in its rapid course the case resembled the condition described as "malignant œdema," a variety not common in this country.

CURIOSITIES OF TINNED FRUITS.

A CORRESPONDENT has submitted to us for examination a living creature which he states was obtained from the inside of a tinned pineapple. The fruit had been boiled at Singapore previously to tinning it and was then imported to this country. On the tin being opened our correspondent was somewhat surprised to find a living insect, of strange and unknown appearance, inhabiting the inside of the pineapple. On examining the insect we found it to be the larva of some beetle the species of which could not be accurately ascertained; consequently it was impossible to say with certainty whether its natural food was vegetable or animal material. It is quite possible, however, that the statement of our correspondent regarding the cooking of the pineapple may be correct; for the fruit might have been imperfectly or incompletely cooked. In that case the temperature of the interior might never have reached so high a degree as to cause coagulation of the living tissues or of the structure of the egg or larva. The power of many insects and mites to resist both high temperatures and the action of many poisons is well known and exceedingly remarkable. Thus the seed of the nux vomica, deadly to most animals, forms the appropriate food of certain beetles. Goats, again, are well known to have no special aversion to hyoscyamus as an article of diet. There is of course always the possibility of error of observation and of the introduction of the insect after the fruit has undergone the process of preservation.

ACUTE INFECTIOUS EPIPHYSITIS.

UNDER this heading Drs. W. M. Coplin and D. Bevan of Philadelphia contribute a paper to the *Medical News* of Aug. 13th. They define acute infectious epiphysitis as a disease peculiar to infancy and adolescence, and due to the specific pathogenic action of one or more of the microbes of suppuration. It is a disease the etiology of which modern bacteriological research has revealed, and which for more than a century and a half has baffled the most diligent inquiry of able scientific observers. The specific cause of this condition is not a special organism, as Becker at one time supposed, but as determined by Krause, Garré and Rosenbach, whose researches and observations have been substantiated by many of the more able bacteriologists of the day, this disease is produced by one or more of the varieties of pyogenic microbes, the entrance of which into the circulation is usually effected through some abrasion of the skin, or less frequently through the mucous membrane of the respiratory or alimentary tracts. The organisms have apparently a predilection for the long bones, and more frequently attack the one extremity, that from which the development of the bone is principally accomplished—e.g., the lower epiphysis of the femur and the upper epiphysis of the tibia. The short and flat bones are not exempt from the process; that they are not frequently involved may be ascribed to the fact that their position and function render them less liable to injury, and that the evolving changes in their development are not of such an active character as is observed in the long bones. The relative affinity of the microbes for one or other extremity of a bone, or for any particular class of bones, is not incomprehensible when the anatomic structures are studied. In the medullary tissue, in proximity to the epiphysial cartilage, where the transitional changes in the vascular supply attain their maximum, or where the blood pressure and velocity are at a minimum, where the capillaries are mere excavations, or have but an imperfectly developed wall, all the conditions are found most favourable for

the localisation and multiplication of micro-organisms, the pathogenic action of which is in health counteracted by the internal resistance of the cells. According to Mr. Howard Marsh there are three situations that furnish a ready nidus for the localisation of microbes: immediately subjacent to the cartilaginous disc; in the vicinity of the ossifying centre; in the line of union between the epiphysis and diaphysis. There is at first an increased supply of nutrition, quickly followed by a rapid multiplication of the nuclei of the fixed cells. These cells surround themselves with a layer of granular material, and the whole is encased within a shell of earthy matter. A poor and lowly organised form of bone is thus produced. This is the analogue of the granulation tissue found in other structures of the body. The compact portion of the bone does not escape, for it is found that the lammæ corpuscles undergo a granular degeneration, and the bone dependent upon the corpuscles for nutrition and repair degenerates. The authors of the paper then describe an illustrative case. Amputation seems to be the only treatment.

TAILORS AND INFECTIOUS DISEASE.

MUCH excitement has been caused by a statement made on Saturday by Miss Frances Hicks, a London tailoress, at the meeting of the Trades Union Congress at Glasgow, that only about two months ago she was making trousers for the Duke of York when two children were taken out of the next house and sent to the fever hospital, and that it was quite possible that the trousers referred to were made in the very room where the children had been, as it was rented by a widow who was a tailoress. We gather from the published accounts of inquiries made by the representative of a London newspaper that this circumstance had not actually taken place, and that there is, therefore, no reason to regard this statement as indicating more than the possibilities which may attach to the making of clothes generally. Charles Kingsley has told in "Alton Locke" the story of the dangers which attend the wealthy classes from their clothes being made by poor persons who have continued their work whilst in close contact with a case of infectious disease. Our own columns have contained accounts of occurrences of like kind, and we are at this moment reminded of a case which came under our observation of a working tailor who attended his wife suffering from small-pox in a room adjoining that in which he was engaged in making clothes. Such circumstances must necessarily happen from time to time when clothes are taken to the homes of the workers. The question which arises is whether the risks of this custom of the trade are such as to constitute so serious a danger to the public health as to render it necessary that no clothes should be made away from the premises of the master tailor. No doubt many cases of infectious disease occur of which the cause remains unknown; and it may be that disease is exceptionally communicated under the circumstances we have described; but it is impossible by any legislation to interfere with home work; and if the possiblity we have indicated is to be guarded against, it must be by the employers providing proper workshops in which the clothes may be made without this chance exposure to infection. It may serve the interests of persons who are well-to-do to pay a sufficient price for their clothes to enable the master tailor to provide the means of guarding them against this risk. For the rest the general public health law must be relied upon: the notification of cases of infectious disease, the early removal of the sick to hospital, and the disinfection of the rooms they occupy, together with the contents of their dwellings. Master tailors may, however, do much in following the example of many milk vendors in requiring their workpeople to give them notice of cases of infectious disease occurring in their homes and in undertaking to make them an allowance when any of their family suffer from infectious disease, and until the sick person has been removed to hospital and the room and its contents have been disinfected. But whatever is done, there should be no encouragement given to poor persons to retain in their own homes the infectious sick who cannot be properly isolated. This, indeed, is the only real safeguard, and any provision which militates against these precautions should be avoided. If Miss Hicks's statement should have awakened any special interest as to the dangers to which the community is exposed from infectious disease occurring among its poorer members, we would desire to point out the importance of obtaining better knowledge of the circumstances in which infectious disease has its origin. The prevention of the spread of infectious disease is undoubtedly important, but the prevention of the beginning of infectious disease is that which is most needed. During the last few years our knowledge of the origin of diseases of this class has been largely added to, particularly by the observations of Mr. W. H. Power in respect of scarlet fever and diphtheria. But work which has had so successful a beginning cannot be prosecuted without larger aid than Government departments have yet thought fit to give to this useful branch of inquiry.

THE SANITARY CONDITION OF HASLEMERE.

IT is now some two years since we referred to this subject and it would seem that practically nothing has been done to remedy the serious defects which we then pointed out. The subject has apparently not been altogether lost sight of, as the inhabitants have from time to time made some small efforts to obtain the needful improvement; but, if we may judge from the reports in the local press, it would seem that the responsibility for the delay rests rather with the rural sanitary authority and the parochial committee than with the inhabitants themselves. We observe from the *Surrey Advertiser and County Times* of the 3rd inst. that the Hon. Rollo Russell, in a letter addressed to the sanitary authority, refers to a report by the county medical officer (Dr. Edward Seaton) published a year ago, dealing with the serious condition of things at Haslemere, and urges that that report should be considered by the sanitary authority without further delay. Another resident, Mr. Rayner Storr, has written enclosing a petition signed by thirty-nine inhabitants, drawing the attention of the rural sanitary authority to "the prevalence of noxious smells and nuisances in Haslemere." Surely it is difficult for the rural sanitary authority to escape blame for allowing so long a period to elapse before dealing with the evidently unwholesome state of the town. It is high time that efficient systems of water-supply and of sewerage should be provided.

TRAINED STEWARDESSES.

IT was for several reasons a happy thought which recently suggested the selection of women who had enjoyed some training as nurses to act as stewardesses on shipboard. The arrangement is certainly a promising one as far as passengers are concerned, and its success would indirectly requite shipowners also. In the frequent event of illness a stewardess who understood nursing would find ample opportunity of proving her double efficiency. This does not of course imply that she should devote herself, even for the time being, to nursing duties, but there are numerous trifling but valued attentions, many niceties in diet and the like, which invalids now sigh for in vain, which might easily be provided at her suggestion. Faults in cleanliness or general sanitation would be more liable to detection and amendment. Thus in many ways the capacity derived from her acquaintance with diverse but compatible occupations would enhance her usefulness. Another point must not be overlooked. The position of such a trained stewardess would carry with it no duty and no power of

independent action. Her place in the ship would still be simply that of a stewardess. Her wisdom and her success would consist in her understanding this. She could not expect to pose as a reformer. Insight blended with tact, and working by judicious and timely suggestion, would alone serve her in any purpose of this kind. No other course would or could be tolerated, for order and obedience come before all other considerations in the management of every well-regulated vessel. While we are discussing this subject, chiefly in view of the nursing capabilities of women, we do not forget that the male agents who share with them the duties of the marine commissariat are also capable of discharging similar nursing duties with success, if allowed the same advantages of instruction. Here is an opportunity for ambulance committees.

"LA FRANCE, LA PLUS HEUREUSE DES NATIONS."

A FRENCHMAN is nothing if not patriotic, and it would be surprising indeed if the feminine portion of the *grande nation* were lacking in this truly national characteristic. Against the cultivation of a quality so estimable we have nothing to say, but a protest is only natural when we find it becomes a cause of unjustified self-laudation. This trait is, were the occasion worthy, most natural and hardly repressible when alien but equally deserving interests are sacrificed at the national shrine. These observations are suggested by a curious passage lately published in a French contemporary, in which "*la plus heureuse des nations*" is congratulated on possessing a lower death-rate, a lower percentage of illegitimacy (!), a greater number of robust adults, and other happy circumstances which place her in front of all other civilised peoples. Figures are given, but their compilation, if the following may be taken as representative, must have been chiefly arbitrary. As regards death-rate, we find it gravely stated that in England this is 31 per 1000, in France 23. This looks well for the national future of our nearest neighbour. If, however, we examine the Registrar's reports for this island during the last decennium (1881 89) we find that the rate was 20. May the happiness of the "most happy nation" be more firmly assured than the assertions of her too patriotic statistician.

THE STAMPING OUT OF GLANDERS.

THERE is at last some evidence that steps will be taken to deal with glanders in a more enlightened and efficient manner than has hitherto been the case, and that what was becoming something of a scandal will no longer be tolerated. It has required a good deal of urging and agitation to rouse the authorities to a sense of their duty; but better late than never. There should be no great difficulty in combating the disease, even without compensation; indeed, it should be to the interest of horse owners to have it extinguished without being bribed to report the existence of the disorder in their stables. Nothing is more liable to abuse than this system of compensating owners for the destruction of horses suffering from an incurable contagious disease; it is fair and proper to pay them for those which are not affected, but which may have been killed because of glanders being suspected in them, but to compensate them for those animals which are visibly and unmistakably glandered is unjust to the taxpayer and very likely to lead to fraud and neglect. It is to be hoped that we shall hear no more of glanders and farcy being treated as different infections; for the latter form is quite as dangerous, if not more so than the former, and should be as energetically dealt with. It has been stated that the incubation and course of glanders are protracted, but this is not so in all cases. The period of incubation is most frequently brief, and not seldom the malady runs a rapid course; hence there are acute and chronic glanders, the first being nearly always observed in the ass, though it is also often witnessed in the horse. With the discovery of the valuable properties of mallein there should not now be any hesitation in establishing a diagnosis in what were formerly considered to be doubtful cases, as the subcutaneous injection of this substance will prove the existence of the disorder in a horse which may otherwise exhibit no signs of it. Even without this reagent farcy is easily enough diagnosed, as its indications are manifested on the exterior of the body; it is only in the internal form of the disease that doubt has sometimes been felt; but by the employment of mallein this should no longer be experienced. It is to be hoped that in devising rational measures for the suppression of glanders among our own horses care will be taken that it is not introduced by those which are imported in such large numbers; for the fact must not be overlooked that the scourge prevails in every European country, in Egypt, America, South Africa and India. By a system of rigid inspection it has not been allowed to enter Australia, New Zealand or Tasmania; but in England, so long as horses are permitted to come from infected regions, we shall always be liable to its introduction unless the greatest care be exercised.

THE HOUSING OF THE WORKING CLASSES ACT.

SOME time ago the vestry of Chelsea instituted proceedings under the Housing of the Working Classes Act for the closing of certain houses in Chelsea, and the leaseholder, having less than twenty-one years' interest, was unable to be a party to the proceedings. Fresh summonses, it appears from a report in the newspapers, were issued with a view to enabling him to see that the work ordered was carried out; but the magistrate refused to hear his evidence, and a Divisional Court subsequently granted a rule *nisi* calling upon the magistrate to state a case. The vestry subsequently made an order for the demolition of the houses, and had begun to carry out this order when the leaseholder applied for an *interim* injunction to restrain the vestry from demolishing the houses before the rule *nisi* had been argued. Mr. Justice Bruce, however, dismissed the application with costs, and the vestry will now doubtless proceed to rid their district of these houses. The plaintiff had entered an appeal at Clerkenwell against the demolition order of the vestry, but had abandoned it owing to the fact that he was not an owner within the meaning of the Act. The position of the leaseholder when he has less than twenty-one years' interest is doubtless anomalous, but it must be recollected that the maintenance of houses falls upon the leaseholder, and it is only exceptionally that a demolition order would be made when the premises are in proper structural repair. The leaseholder is therefore usually in fault in cases where demolition orders are made. In the report of the proceedings which we have before us, and which may not be altogether accurate, there is nothing to show whether the leaseholder effected improvements after the magistrate first granted a closing order. A precise report of these proceedings would be useful alike to sanitary authorities and the owners of houses.

FEVER PREVALENCE IN LONDON.

THE resources of the Asylums Board are now being taxed to their utmost to keep pace with the steadily continued prevalence of fever, chiefly scarlet fever, in London. On the 12th of this month, the large total of 100 patients were removed to hospital. At the present moment about 3700 patients are under treatment, of whom 3300 are suffering from scarlet fever. From the "Monthly Analysis of Sickness and Mortality Statistics in London" for August, which we print in another column, it is seen that although most of the cases of scarlet fever were notified from Islington, Poplar and Lambeth, yet, in proportion to population, the rate of prevalence was greatest in Holborn of the central districts, Newington, Bermondsey and Plumstead of

the south districts, and Whitechapel, St. George's in the East, Limehouse, Mile-end Old Town, and Poplar of the east districts. The east end of the metropolis appears, therefore, to be the especial seat of the present prevalence of scarlet fever, and Poplar appears pre-eminent amongst these, though its scarlet fever attack-rate is below that of Holborn. These facts call, we think, for some inquiry by the Local Government Board or the London County Council. In the meantime, we learn that efforts are being made to press on the temporary North-Eastern Hospital at Tottenham. The site of this consists of seventeen acres, and the accommodation will comprise room for 440 patients and 250 staff. The wards will be so constructed as to afford 144 square feet of superficial space to each patient; and it is anticipated that they will be ready for patients in about three weeks' time. Meanwhile the usual autumnal exacerbation of scarlet fever will take place, and the hospital managers will have enough to do to keep pace with the requirements that will be forced upon them. It is gratifying to see that the extra work thus entailed upon the managers has not prevented their cholera committee proceeding with the active and important work of maturing efficient plans of ambulance transit and hospital isolation, in the event of cholera appearing in London this year or next.

CHILDREN'S TEETH.

THE statistics brought forward by Messrs. David Fisher and George Cunningham (who have so long been identified with the "cause" of children's teeth), and which have repeatedly been the subject of papers read at the British Dental Association and other societies, are further supplemented by a report by Mr. Denison Pedley. This report is derived from a systematic examination of 1985 children at the Sutton district schools. Though not so black as some, yet it shows an enormous amount of disease, for out of this number only 527 are recorded as having sound dentition. Mr. Pedley makes some pertinent remarks. The temporary teeth, he says, are popularly thought not to be deserving of any particular attention, whereas much misery and detriment to health may be avoided by judicious treatment. Between the ages of six and twelve there were, according to the table, 758 permanent teeth that could and should have been saved, 201 hopeless and 121 which had already been extracted, most of these being the six-year-old molar, a tooth so often mistaken by parents for one of the temporary set. He suggests that all public schools should have a paid dental surgeon, who should periodically examine all the children and perform any operations—conservative or radical—that are considered to be desirable, and, moreover, that a record should be kept. These views are entirely in accordance with our own, and, we are glad to say, are gaining ground generally, as exemplified by the recent sanction of the Local Government Board to the appointment of a dental surgeon to the Central London district. The records of so large a number of cases as would come under observation in such an appointment, if carefully kept, could not fail to be of scientific value.

REARRANGEMENT OF THE CORONERS' DISTRICTS OF LONDON, MIDDLESEX, SURREY AND KENT.

THE *London Gazette* of the 8th inst. published the new coroners' districts as arranged by Order in Council on that date. The county of London is divided into eight districts—viz., the Eastern, North-Eastern, Central, Western, Penge, Southern, South-Western and South-Eastern. The county of Middlesex is divided into three districts, named respectively the Eastern, the Central and the Western. The county of Surrey is divided into three districts—the Kingston, the Reigate and the Guildford. Lastly, the county of Kent is divided into six districts. These are the Cranbrook, Greenwich, New Romney, Sittingbourne, Ashford and Tonbridge. Mr. Luxmore Drew, M.B., barrister-at-law, has been selected by the London County Council for the vacant office in the south-western district. This, while reflecting great credit upon the Council, is only what might have been expected. The arguments in favour of electing a candidate who has had a medical training are overwhelming and do not admit of argument. Dr. Drew possesses also the legal qualification which will satisfy those who are opposed to the medical coroner pure and simple. It is very important that the exact boundaries of all these districts should be carefully studied by all those whose duties render a knowledge of them necessary or even desirable. At the present time a difficulty has arisen as to which is the proper coroner to hold an inquest on the body of a man who died from an injury in Knutsford-road, Latchford, a suburb of Warrington. Mr. Yates, the Cheshire coroner, and Mr. Bingham, the coroner for the West Derby division of Lancashire, have each decided that the death did not occur in either of their districts, and the matter remains in dispute. Similar occurrences may happen if the boundaries of any newly created districts are not carefully studied.

WORKHOUSE INEFFICIENCY.

ANY person possessed of ordinary humanity will admit the force of reason which, a few days ago, led one of the metropolitan magistrates to condemn in the strongest terms an abuse in our system of casual relief. In this case a man who had already walked some twenty miles arrived at the workhouse in Chelsea. Here he could not be received for want of a casual ward, but was directed to go some three miles further—to Notting-hill. Driven by fatigue and desperation to an act of petty violence, he was sentenced to a short term of imprisonment, from which, however, he was happily released when the provocation to which he was subjected was made known. It is hardly to be wondered at that the practical inefficiency of the workhouse in Chelsea was described by the magistrate presiding in this case as monstrous in its negligence. The casual ward is clearly an essential portion of the parochial system in which it exists. Its absence might at any time entail upon an applicant for charitable shelter not only fatigue in seeking a more distant lodging, but possibly injurious exposure with consequent illness. It is therefore to be expected that steps will be taken as early as possible by the Chelsea Board to make good so grave a defect in their workhouse arrangements.

ARTISANS' DWELLINGS.

A STATEMENT in a recent report by Mr. A. Wynter Blyth, the medical officer of health of Marylebone, in reference to the administration of the Customs and Inland Revenue Act of 1891, is well deserving of consideration by those who will have the framing of the London Building Bill which, it is hoped, will be introduced into Parliament during next session. It will be recollected that owners of artisans' dwellings can claim exemption from inhabited house duty if they can produce the certificate of the medical officer of health that such houses are properly constructed. Mr. Blyth submitted a long list of premises where sanitary improvements had to be effected before he could give the requisite certificate, and he stated that "from this list it will be gathered that it is quite exceptional for a block of artisans' dwellings of even recent construction to be in a tolerable sanitary condition. The reason for this anomalous state of things is that during the building of these dwellings the sanitary authority seems to have no power; a dwelling must be occupied before it comes under supervision." The London Building Acts are indeed so faulty that they permit houses to be erected for which in particular instances closing orders have been obtained shortly afterwards under the Housing of the Working Classes Act. Under circumstances where this can occur we can well

believe that many, which cannot be thus dealt with, still fall short of the higher condition of excellence which is contemplated by the Customs and Inland Revenue Act. The remedy undoubtedly is to amend the Building Acts; but even when this done it is still desirable that the planning and arrangement should be subject to the approval of the local authority, for no Act can be so drawn as to cover all the conditions which ought to be held necessary. Some more intimate relation between the administration of the London County Council and the local sanitary authority appears to be indicated, but it is not obvious how this can be brought about until these authorities are more closely associated by an Act for the better government of London.

THE PUBLIC HEALTH OF ITALY.

AN Italian correspondent writes:—"According to official information furnished by the Ministro dell' Interno, the health of the peninsula is excellent, all the sanitary bureaux in the islands, as well as on the mainland, having just telegraphed to headquarters in the same satisfactory sense. The so-called case of cholera announced from the island of Capri, in the Bay of Naples, turns out to have been greatly misreported. It was simply a case of ordinary diarrhœa, rather violent in character. Meanwhile the sanitary surveillance on the northern frontier is maintained with unabated vigilance. The 'Direttore della Sanità Pubblica,' who, as already announced, had gone to the Swiss confines to inspect the sanitary 'servizio di vigilanza,' has just sent back a most reassuring report. Besides the measures for disinfection and isolation ready in case of need to be enforced on the Italian side, the coöperation of the Swiss authorities in keeping the Government of Italy informed as to the first indications of cholera or other infectious disease within their frontier is at once cordial and effective. Both powers, Italian and Swiss, are mutually pledged to the adoption of the most rigorous ulterior measures should the sanitary situation prescribe them."

PERSONAL LIBERTY AND SANITARY LEGISLATION.

WE are only at the beginning of the question of the limitations of personal liberty for the good of society. It is raised in a somewhat acute form in such Acts as the Vaccination Act, the Notification of Infectious Diseases Act and the Public Health Act. Under the last Act especially strong human feelings have to be contended with and great tact and judgment are needed in those who execute the law. The law nevertheless is a good and reasonable one. We read in the *Western Daily Mercury* that recently great difficulty was experienced at Devonport in carrying out a magistrate's order for the removal of a child with scarlet fever to an infectious hospital. The mother locked the door and the neighbours sympathised with her. The first resistance succeeded; but at length the key was found and the child was removed in the interest of the public, and especially of the child's own family and of the neighbours who were the resisting parties. At St. Ives a public meeting has been held to oppose the introduction of the Notification of Infectious Diseases Act on the view that it is the first step to isolation of infectious cases. The administration of the law should be carried out with mingled firmness and sympathy.

"A BRITISH HOSPITAL FOR HYDROPHOBIA."

THE mental attitude characteristic of the opponents of vivisection is, we fear, too immovably fixed in sentiment and averse to reason to allow of its being altered by rational discussion. We are not therefore surprised that in spite of the signal triumphs of humanity won for mankind by this method alone, and in nothing illustrated more distinctly than in the preventive treatment of hydrophobia, the position of these objectors remains unchanged. They cavil as we suggested in our last issue, at the needful suffering inflicted on a few rodents with this purpose, and in arguments of the most fallacious character seek to load it with responsibility for numberless alien operations. What, in fact, does the suffering endured in preparing the virus of rabies really amount to? We may best answer this question by reference to a paper by Dr. W. N. Thursfield in the *Sanitary Record* of Dec. 15th, 1887, in which it is stated that the only processes absolutely essential to the practical working of the Pasteur system consisted in: (1) the inoculation of three rabbits daily with rabid virus; (2) test inoculations chiefly on guinea-pigs to test whether animals presumably rabid were really so. (The latter we should consider much less essential than the former and probably not always indispensable.) Further, all inoculations except those which were merely subcutaneous (and such are daily employed in the ordinary treatment of disease) were performed under anæsthetics. The rabbits operated on acquired the paralytic form of rabies, with dulness of cerebral function and apparently did not suffer much pain. Surely no thinking person would compare this greatly limited discomfort in animals, hardly to be called suffering, with the irrepressible agonies of hydrophobia in man. What, then, becomes of even the sentimental opposition to a British institute for the treatment of hydrophobia?

THE SPLEEN A NECESSARY FACTOR IN IMMUNITY.

DRS. PIZZONI and PATTANI have found that the spleen exerts a very important influence in processes adopted with the object of rendering animals immune to infectious diseases. Their experiments were conducted with the virus of tetanus upon guinea-pigs, and they found—as, indeed, they had been led to expect by previous researches on the blood serum of animals rendered immune—that those in which the spleen had been extirpated were incapable of being rendered immune, this incapacity being permanent. It would thus appear that no other organ is able to carry on the particular function of the spleen upon which the immunity depends, though its hæmatopoietic functions may, as is well known, be vicariously performed by the medulla of the bones.

RESPONSIBILITY IN HOMICIDE.

SINCE the time—now long forgotten in antiquity—when public opinion first began to busy itself with the duties of the physician no subject has probably supplied it with a deeper interest than that of destructive madness. Our ancestors unwrapped it from the dark shroud of demon-possession and showed it forth as a form of lunacy. We, more wisely vague, have clothed it with another shadow and called it homicidal mania. Still we seek more light and still we do not know the limit, if there be one, which excludes it from crime and includes it within the province of disease. For a ray of light which may help our decision in this matter, and thus prove of practical value, we are indebted to Dr. Ellis of Singapore. The experience of this observer as medical superintendent of the lunatic asylum in that town has brought him in contact with Malays affected with the disease known as "amok" or "amuck." The result of his investigations is that he divides those evidently suffering from this disorder into two classes. These are: (1) Persons in whom the sudden maniacal fury is obviously and unaccountably impulsive, uncontrollable and unexplained by previous ill-temper; and (2) those who, under a sense of wrong, have worked themselves into a fury which results in the ungovernable impulse referred to. The latter he naturally considers at least partially responsible, the former not at all. Researches into causation have yielded no very tangible result, and the classification above given brings us no nearer to the causal fountain head than we were before. It is so far

practically useful, however, since it lays down as the only possible basis of judicial condemnation a previous and conscious neglect of self-control. Unfortunately we are still confronted by the problem suggested by a later "uncontrollable" impulse. The real significance of this could only be justly estimated on additional proof of the existence or absence of a like sense of responsibility. This forms the core of the question. It should be clearly understood, however, that badness is not madness in any legal sense, and that even great and wilful wickedness is consistent with sanity.

VARICELLA AND HERPES.

PROFESSOR JOHANN BÓKAI, superintendent of the Children's Hospital at Buda-Pest, publishes in a Hungarian medical journal several cases of varicella which had occurred in his practice under rather peculiar circumstances. The first of these cases had been observed in the year 1888, when a child was attacked by chicken-pox. Ten days afterwards another child in the same family had exhibited all the symptoms of herpes zoster. Professor Bókai saw a similar case in 1891. A woman suffered from herpes zoster, and twelve days after its appearance, her child of eight years had chicken-pox. A second case occurred in the same year. He diagnosed herpes frontalis in a young man, and fifteen days later chicken-pox in his sister, a little girl of thirteen. Professor Bókai communicated his observations to Professor Korányi and the latter very soon reported a similar observation. He had then in his ward a patient suffering from herpes of the thigh, and eight days after his admission a patient in the same ward, who had a splenic tumour, contracted chicken-pox. The suggestion is offered that an attack of chicken-pox, instead of exhibiting general eruption, may under certain circumstances have the latter so circumscribed as to form the ring peculiar to herpes zoster. Professor Bókai considers this explanation the more likely, as latterly epidemics of herpes have been observed, especially by Kaposi. Certain forms of this disease have been known to be highly contagious.

DEATH FROM HYDROPHOBIA.

THE death from hydrophobia of H. L——, a lad seventeen years old, a joiner, calls for something more than passing notice. On Aug. 1st, 1887, his brother (a young man aged twenty-six), and J. W. W—— were all bitten by a mad fox-terrier dog. The two brothers and W—— went to Paris four days after they had been bitten and were submitted to the anti-rabic treatment in the Pasteur Institute for about fourteen days. On their return to this country the elder brother succumbed to an attack of hydrophobia nine weeks after he was bitten, whilst the other two patients continued apparently in good health. The younger lad stated that he had no fear of hydrophobia, and for five years he had no symptoms of anything of the kind. On Sept. 1st, however, he began to complain of pains in his neck, arms and back; when he attempted to drink he was seized with spasms, which became more marked until the 4th; he then became very nervous; he had to be held down in bed, and chloroform was administered; he foamed at the mouth, called out, was convulsed, and ultimately he died exhibiting all the symptoms of hydrophobia, a diagnosis that was said to be confirmed by post-mortem examination. The period of incubation in this case is a most extraordinary feature. Hitherto the longest period at which an attack of hydrophobia has supervened after a bite is said to be about two years and a half, and it is very remarkable that if this was a case of true hydrophobia the appearance of the first symptoms should have been at such a late period after the bite. It seems that the patient had suffered from blood-poisoning a short time ago, and from the nature of his employment the possibility of this being an attack of traumatic tetanus must not be overlooked. It is certainly a matter that should be carefully inquired into. The symptoms and post-mortem appearances are so much alike in the two conditions that a mistake in diagnosis may possibly have been made.

SMALL-POX.

ONLY some twenty cases of small-pox per week are reported throughout the country. The north still continues to furnish most of them, Warrington and Halifax being the places at which the greater part have occurred.

FOREIGN UNIVERSITY INTELLIGENCE.

Havana.—Dr. Gabriel Casuso has been appointed to the chair of Midwifery and Gynæcology.

Innsbruck.—Dr. P. Dittrich of Vienna has been appointed Extraordinary Professor of Forensic Medicine.

Jena.—Dr. Adolf Witzel of Essen has been recognised as *privat docent* in Odontology.

Paris.—Professor Verneuil, the well-known surgeon of the Hôtel Dieu, who is sixty-eight years of age, is about to retire. He was one of the first in France to recognise the importance of antiseptic surgery. It is expected that Professor Lefort of the *Pitié* will be appointed in his place.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. Karl Ritter von Cessner, Emeritus Professor of *Akiurgie*—i.e., surgical appliances—at Baden, in Vienna, at the age of seventy-five. He was vice-president of the Austrian Red Cross Society, in the work of which he took very great interest.—Dr. Néroutzous Bey, formerly President of the International Sanitary Council of Egypt.—Dr. Antonio Maria Barbosa, Emeritus Professor of Operative Medicine in the Lisbon School of Medicine.

ON Friday night, Sept. 1st, at the Sunderland Infirmary, Dr. James Murphy performed abdominal section on a girl aged seventeen for a perforating ulcer of the anterior wall of the stomach. He pared the edges of the ulcer and closed it with two rows of sutures; he then washed out the abdomen and closed the wound. The perforation had occurred thirteen hours before operation, and the contents of the stomach had escaped into the abdomen. Up to Wednesday, the 14th inst., the patient's condition left nothing to be desired.

IT is very satisfactory to perceive the attention that is being directed all over the country, by bodies concerned with the administration of public health laws, to the condition of water-supplies. No more hopeful sign of the march of intelligence in this direction can be afforded than the wide interest that is being taken in this important question.

THE Sanitary Committee of the Glamorgan County Council has decided to promote the appointment of a medical officer of health for the county, at a salary, inclusive, of £1250.

THE number of patients in the several fever hospitals of the Metropolitan Asylums Board at midnight on Sept 13th was as follows:—Eastern Hospital: scarlet fever, 414; diphtheria, 69, and enteric fever, 33. North Western Hospital: scarlet fever, 393; diphtheria, 81 and enteric fever. 24. Western Hospital: scarlet fever, 304; diphtheria, 44; typhus fever, 3 and enteric fever, 10. South Western Hospital: scarlet fever, 316; diphtheria, 61, and enteric fever, 21. South Eastern Hospital: scarlet fever, 400; diphtheria, 24; typhus fever, 1 and enteric fever, 7. Northern Hospital: scarlet fever, 774 and diphtheria 20. Gore Farm Hospital: scarlet fever, 730. In the Hospital Ship Atlas there were 4 cases of small-pox.

CHOLERA.

PROGRESS OF THE CHOLERA.

THE latest returns show a sustained decline of cholera in Hamburg, where it is officially reported that up to Sept. 10th there had been 13,238 cases, or an attack-rate of 20·7 during the period of the epidemic, and 5·805 deaths, or a case mortality of 43·8 per cent. As far as is known, the disease has acquired no foothold in Berlin or other cities of North Germany. At the same time, active measures of medical and hygienic administration are about to be carried out in the whole of the Elbe basin. And so far there has been no appearance in Vienna or the Austro-Hungarian empire, where a considerable pecuniary outlay is being effected in organising measures to combat the disease should it appear. Cholera is of course still raging in Russia, but evidences of its diminution both in quantity and intensity, particularly at St. Petersburg, are forthcoming. As regards France, a distinct and definite prevalence, hardly amounting to an epidemic, is apparent in Paris, where it is reported that the quarter of La Villette is undergoing a smart attack of fatal enteric fever. This is not reassuring, and may point to an epidemic extension of what true cholera there may be in Paris, or to its probable development from vague cases of cholerine, choleraic diarrhœa and variously termed bowel complaints which obtain there at present. It is also reported that the disease still prevails at Havre, which remains a distinct danger to us. News from the Hague, too, does not tend to allay apprehension in this country, for there are reports of fresh cases at Rotterdam and other places in Holland. As regards actual importation into this country, it is satisfactory that none has occurred, though two vessels have arrived, one at Barry, near Cardiff, from Hamburg, and the other at Hull from Cronstadt, having had on their way deaths on board from cholera. They have been medically inspected and overhauled, and are being detained under observation. If anything additional were required to impress upon people's minds the inutility and barbarousness of quarantine, it would be the side-light thrown upon that system by the scenes lately enacted off Fire Island, outside New York. The selfishness and inhumanity shown to the belated passengers of the *Normannia* by the inhabitants of that island is but the natural corollary of a procedure which, by its detention of the healthy and unaffected in close confinement near the sick, breeds disease and engenders panic and suffering.

THE REAL SAFEGUARDS.

The literature connected with the present prevalence of epidemic cholera in Europe and its transmission from infected places abroad to this country and across the Atlantic to the United States is fast becoming so extensive that it is difficult, if not impossible, to keep pace with it. In our previous articles we have attempted to give a *précis* of the facts connected with its current history and progress. We have also endeavoured to inculcate certain precepts and practice in regard to cholera, and to state what we know and what we still require to know about it from two different aspects—viz., as a pandemic or branch of epidemiology, on the one hand, by surveying the facts connected with its extension on a large scale, over vast tracts of country and amid different populations; and, on the other, as to its spread on a small and limited scale, by studying its progressive steps in a circumscribed community made up of individuals. In order that our remarks should not lack a practical aim we have striven at the same time to indicate such firm footholds of fact as appeared to be warranted by our past experience and present knowledge. We repeat that the only real safeguard against cholera is public sanitation in its broad sense, and in its application to individuals accompanied by a vigilant observation and inspection of all shipping and immigrants arriving in this country from infected ports and centres. The first is not only effectual against cholera, but against any other epidemic disease. The latter implies in this country arrangements for the isolation of all cases of cholera or suspected cholera that might be landed, and the prohibition of passengers by infected vessels from landing who cannot give any precise address in view of their being kept under notice and their subsequent medical history traced and observed. The temporary detention, cleansing and disinfection of a ship and the discharge into the sea of dirty bilge and tank water used on the voyage are requirements to which most persons, apart from any cholera theories or hypotheses they may entertain, could not reasonably object. It seems to us that the chief thing that still remains to be done is to develop and perfect the necessary machinery in these directions. Notwithstanding, however, that as a nation we are believers—we had almost said worshippers—of the trite saying that "nothing succeeds like success" and that the measures adopted by the Local Government Board have hitherto been most successful, there are many people in this country who are clamorous for the adoption of more extensive and stringent measures, and who would not stop short of the old system of quarantine, which, besides being an anachronism in the present age, inflicts the largest amount of suffering and inconvenience and future danger in order to secure the minimum amount of security in the present. What are the facts? Cholera has been introduced at numerous ports and places in this country, but we have hitherto had no outbreak or epidemic here. It may be that the measures adopted have arrested its progress. It may be that an epidemic manifestation of its activity is only suspended for a time, but the fact remains. For the present, at any rate, this country is quite free from cholera. Notwithstanding that the disease has prevailed in France since April last, and lately at Havre and other places, and that there has been free and constant communication between the two countries from April to the present time; notwithstanding that cholera, advancing by another and independent route, reached the Caspian in June last and St. Petersburg in August and then Hamburg, and all the facts connected with its subsequent medical history, this country has been free from that disease; notwithstanding that we, as an Imperial Power, may be likened to a wasp, with England as the head at one extremity and India at the other, united by a narrow waist, the Suez Canal, and that we have a larger, more direct, constant and, it may be said, organic connexion with the home of cholera than any other country, we have nevertheless suffered less from that disease in England and had greater experience in the management of it in India than any other country in Europe. The *Frankfurter Zeitung*, in adverting to Professor Virchow's recent visit to Russia and his return to Berlin, improved the occasion by urging its readers to regard the matter practically, to press on the Government the necessity for more thorough attention being given to public health and sanitary reforms upon the model of Great Britain. What has been done in this country up to the present time has, at any rate, been successful; it has been prudently designed to achieve its object with the least amount of hardship, suffering and public inconvenience, and it has consequently been practicable. It is only by deliberate and well-considered action, and not by adding a stimulus to terror or by appeals to unreason that anything useful can be done. That it is easy to create a state of terror about the infectious nature of cholera and the danger of its importation is perfectly clear from all that has recently taken place at the New York quarantine station and the conduct of the unthinking, panic-stricken people of Fire Island towards the healthy passengers who desired to land from the steamer *Normannia*. It seems strange, in a country with such an extent of territory and unbounded resources as America and accustomed to the wholesale arrival of emigrants from all parts of the world, that some safe place for their temporary detention should not have been provided, with a due regard also to their health, comfort and food-supply. The appalling mortality on board the steamer *Scandia* was, no doubt, mainly attributable to overcrowding and other local insanitary conditions, about which we shall have something to say hereafter. For the present neither the discovery of the comma bacillus nor the anti-choleraic inoculation of M. Haffkine will practically avail us anything in the way of prevention. The plain duty before us is to adopt measures of proved efficacy and apply them in a similar way to what we should do in the case of any other epidemic disease, and not to supplement evils which are unavoidable by others of our own production, or establish nurseries for the development of cholera by crowding together numbers of half-starved, frightened suspects into quarantine quarters. It is easy enough to create a large amount of vicarious suffering amongst innocent people by such mistaken procedures without doing any good that could not, in our opinion, be obtained

by the simpler and more efficacious measures adopted in this country and India.

We are glad to notice a marked decrease in the number of cholera seizures and deaths in Russia, where the epidemic seems to be declining. When its statistics are compiled it will be seen that the epidemic has been one of the severest that has ever visited that country. At Hamburg the outbreak is of a severe and fatal type. From a return furnished by the Statistical Bureau of the total number of attacks and deaths up to the 10th inst., it appears that there were 13,238 cases and 5805 deaths. These figures show that, out of a population of 640,400, 20·7 per 1000 were attacked and 9·1 died. It is a curious fact that while the prevalence of cholera among our European troops in India have considerably diminished of late years, the mortality per cent. of those attacked has apparently greatly increased, and the increase cannot be accounted for by any change of diagnosis; for the figures recorded for the earlier period, from 1827 to 1851, all show a lower rate of mortality than those from that period up to the present time.

It has struck us as important to obtain some data from the past history of cholera which may serve to indicate approximately what we may expect as to the progress and direction of a cholera epidemic and as to the probable duration of an outbreak under various given circumstances, and for that purpose we have turned to the reports of the late Dr. Bryden, whilst statistical officer with the Government of India, which, apart from any theory or deduction of his, contain a mine of information on the subject. The track which cholera apparently pursues beyond Hindustan seems to be something as follows:—When an epidemic occurs throughout the Central Provinces its western extension is through Guzerat, Kurrachee, Southern Persia and Arabia to the Mediterranean. When the epidemic extends through Bundelcund, Agra, Ajmere and Cabul it travels towards Northern Persia and the shores of the Caspian. An epidemic commonly lasts, as we have said, three, or between three and four years, from start to finish. According to Dr. Bryden, the Indian cholera of 1830 appears to have extended from the Ganges to the Mississippi in less than two years, and was probably very nearly extinct in America and the greater part of Europe in 1833. It first appeared in England, Ireland and France in the spring of 1832. The intervals between one epidemic and the next are always uncertain and commonly long; but every epidemic of the disease in India does not, of course, extend beyond that country. Whether it proceeds exclusively by human intercourse or not, it usually happens that a relatively small percentage of the towns and villages are attacked in the province or area through which the epidemic is passing. Notwithstanding Professor Virchow's allusion to previous experience in Russia as to the continuance of the disease in winter, it may be safely said that cold weather is inimical to the progress of cholera. It is a matter of annually recurring observation in India that the disease vastly diminishes or altogether disappears there during that season. It must be remembered that in Russia, in addition to the presence of exceptional insanitary conditions which afford a more or less permanent cholera nidus, the dwelling-houses are exceptionally heated by artificial means in winter.

As regards the duration of an outbreak of cholera, this will of course be dependant upon conditions, such as the climate, the season in which the disease manifests itself, the soil, water—in short, according to the environment of the affected population. Still, the disease appears and rises to a maximum, and then the figures begin to tail off until it disappears altogether, although the insanitary state of the town or place often remains much the same as it was at the beginning of the outbreak. In some cases the outbreak lasts six weeks; in the majority of instances, where it was a severe and rapidly extending one, it occupies from three weeks to a month, and then rapidly declined. In the case of Hamburg the maximum number of attacks was reached in from ten to fourteen days and continued high for a few days longer, and then the number of attacks began slowly to decrease. In almost all cases of true Asiatic cholera the larger number of fatal cases occur at the beginning and of recoveries at the end of an outbreak. Children are very susceptible, but infants at the breast are rarely attacked. In the case of European regiments attacked on the march in India the duration of the outbreak is usually short. Out of a total of 197 fatal cases occurring under such circumstances 94 per cent. died during the first twelve days and only 6 per cent. afterwards. A regiment moving, unless it incurs reinfection, usually parts with its cholera before the twelfth day. In the case of ships so much depends upon the extent of the overcrowding and other conditions. It is a noteworthy fact that cholera has sometimes occurred among troops coming from some infected place and been confined to them and has not spread to others on the same vessel. The well-known case of the *Renown*, published in one of the late Dr. Sutherland's reports, is interesting. Cholera appeared in the town of Gibraltar on Aug. 19th, 1865. On the 21st a wing of the 19th Regiment went on board the *Renown*, and a soldier was attacked and died of cholera. After an interval of thirty hours the ship put to sea. On Sept. 5th, a fortnight after the fatal case at Gibraltar, cholera broke out and lasted for fourteen days, till Sept. 19th. The *Renown* was far on her way to the Cape at the time of the outbreak, which exactly corresponded with the period of maximum intensity of the epidemic in Gibraltar. In outbreaks among troops stationed in the so-called endemic area and in the gaols of Lower Bengal 90 per cent. of the cholera deaths occurred within the first fourteen days. In the gaols of Upper India the duration of the outbreaks was much longer. A number of most competent pathologists and observers in this country and abroad regard Asiatic cholera as a specific infectious disease caused by the comma bacillus of Koch, but that it is not contagious in the ordinary sense of the term, being rarely communicated directly from person to person. The doctrine of specific infection involves of course the assumption of some definite method of introduction, and contaminated water used for drinking, cooking and washing is held to be the chief agent by which the choleraic infection is conveyed, to which may possibly be added in some cases the inhalation or swallowing of dust containing the specific cause. Everybody is agreed—whatever may be their views in these respects—on the essential importance of pure, uncontaminated water and the protection of all sources of water-supply.

We have already spoken of the marked success attending the Indian practice of camping out the troops on the occurrence of cholera, and it is a striking circumstance, as indicative of the influence of locality, that it has happened that troops, on returning to the barracks where they were first attacked, have been more than once reattacked and lost the disease by a fresh move into camp. The danger attending all overcrowding during times of cholera cannot be urged too strongly. The contrast between the steerage and cabin passengers on board steamers in this respect, the continuous occupation of hospital wards, the effect of dispersion as opposed to the aggregation of human beings, and the incidence of the disease among troops when they have been overcrowded in times of cholera, are all illustrations of its truth.

Before concluding we desire to call attention to the instructions of the Royal College of Physicians published by the Government. They appear to us to be plain and practical, and we are gratified to find that, in the main, the College adopts a line of management and treatment very much in accordance with that which we have ourselves indicated.

PROFESSOR CANTANI ON THE TREATMENT OF CHOLERA.

The *Berliner Klinische Wochenschrift* of Sept. 12th contains a lengthy article on the treatment of cholera by Professor Cantani, of Naples, who has had much experience of the disease in former epidemics in that city. He points out that sometimes the fatal stage of algidity and asphyxia is produced very rapidly, without any great loss of water and resulting blood inspissation which ordinarily characterise the attack; and he attributes the former to the direct action of the poison generated in the intestine (either directly or indirectly) by the comma bacillus. The indications of treatment are, he says, four in number—viz., to check the multiplication of the bacilli in the intestine; to neutralise the chemical poison formed in the bowel; to cause the speedy elimination of the poison from the blood; and to diminish the more or less marked degree of blood inspissation that ensues on the loss of water. The first two of these apply only to the earlier stages of the attack, the others to the treatment of declared and severe attacks. In addition, there are symptomatic treatment, warmth and nerve stimulation &c. Professor Cantani has long advocated the use of hot injections of tannin as of the greatest efficacy in early treatment, and he sees that their employment is

justified by what has since become known of the nature of cholera. No remedy given internally is so effective as this "enteroclysis," and the use of tannin is perfectly harmless; whereas injections of carbolic or boracic acids in sufficient amount to produce any effect only irritate the bowel and increase the risks of further mischief; whilst sublimate, by combining with albumen, forms a coating beneath which the bacilli still flourish. The acidity of the solutions and tannin itself, being distinctly bacillicidal, meet the first indication above mentioned. Tannin has also been shown experimentally to neutralise the poison produced by the bacilli. Cantani has proved, moreover, that such injections, even in comparatively small amounts, pass up beyond the ileo-cæcal valve, and he maintains that no remedy, astringent or other, given by the mouth can exert such a marked local effect as the injections. From five to twenty grammes of tannin are suspended in from one and a half to two litres of water or camomile infusion, with twenty to thirty drops of laudanum and thirty to fifty grammes of gum arabic, the temperature of the fluid being kept as high as 39° to 40° C. This degree of warmth is an essential part of the plan, combating the tendency to algidity in as satisfactory a way as the hot bath (which is often contra-indicated by cardiac weakness) and stimulating the abdominal nerves. Professor Cantani gives statistics from his own experience of 1884 and that of Dr. Bela Angyan at Buda-Pesth, which bear out his assertion that when cases are treated by this measure in the earliest stages they all recover, and that even in the later stages the mortality is considerably reduced below the average. The action of the injections is better the longer they are retained, and whereas in milder cases it may only be necessary to administer three or four injections on a single day, in others the treatment requires to be carried on for several days. He cites the satisfactory results obtained at one of the cholera hospitals at Naples, where the nurses were instructed to administer the injections on the slightest sign of cholera. As confirmatory of the antagonism between tannin and cholera, he states that hardly a case of that disease occurred in the Naples tanyards, whereas among workers in the glove-leather factories, where tannin is not used, there were several attacked. The "enteroclytic" treatment, besides astringing the bowels and acidifying the intestinal contents, aids in their removal together with their toxic elements, and although it is possible that its early employment may lead to non-choleraic cases being treated, there is no harm in this, as it is quite as applicable for other conditions of diarrhœa arising from abnormal fermentation. He gives no drug internally at this stage, but allows small quantities of water or ice, old red wine, champagne, Bavarian beer, or lemonade made with hydrochloric or lactic acids, or lemons with the addition of a little cognac. The dangers of the algide stage depending on the poison in the blood paralysing the nerve centres and heart muscle, and also on the inspissation of the blood impeding the action of the heart and tending to accumulation in the small vessels and thus diminishing oxygenation, can only be met by bringing into the blood and tissues as much water as possible. This has been long recognised and is the reason for treatment by intra-venous saline infusion as used by Hayem, but with not very satisfactory result. Professor Cantani himself has employed the subcutaneous injection (hypodermoclysis) of hot saline solutions (four grammes of sodium chloride, two grammes of sodium bicarbonate to a litre of water, at 38° to 40° C.), two amounts of about half a litre being injected at the same time. He says this fluid is rapidly absorbed and gives the remarkable statistics of 187 cases thus treated with 114 recoveries, or a mortality of 39 per cent.—i.e., of severe cases be it noted. The injections should be given at the beginning of the algide stage, and the sites selected have been generally the ileo-costal, lumbar, interscapular or gluteal, and the injection is generally made in two places at the same time. Professor Cantani gives several reasons for preferring this to the intravenous plan; whilst of injections into the pleural and peritoneal cavities there is, he says, but little experience. At the same time he points out that his tannin-enteroclysis also affords a means of supplying water to the organism, and since adopting this method of treatment he has had less occasion to resort to the hypodermic injections. The principles, then, of his plan of treatment are clear and defined. To anticipate the inspissation of blood and prevent accumulation of the cholera poison and excretory metabolic products in the tissues, the hot tannin injections must be practised from the very first—the initial choleraic diarrhœa—and repeated after every motion; and when the algide stage begins, either because the tannin treatment has been delayed or too seldom repeated, then this must be combined with the hypodermic method. The scientific treatment of cholera demands therefore the utmost care and vigilance on the part of the physician and nurses, who should have the moral support of the family. In the final or reaction stage—miscalled "cholera typhoid"—where there is no longer a question of choleraic poisoning, but rather of its effects, he recommends the free drinking of water and some stimulant, which, if the stomach be intolerant, must be given by enemata. Here again he has sometimes employed acid solutions—tannin or hydrochloric acid (3 to 5 per cent.) or simple saline solutions (10 to 15 per cent. of common salt). But in cases where the reaction is severe he recommends warm saline hypodermic injections. At the close of his article he refers to the question of preventive inoculation, which has hardly got out of the experimental stage, and hints that the fact of two or three recurrences of cholera in the same subject within a short space of time is not favourable for the success of such a practice. Although we may hope in the future to have more certain preventive measures, at present all we can do is to treat the disease on rational principles.

PRECAUTIONS AGAINST CHOLERA.

The following is a copy of correspondence which has passed between the Local Government Board and the Royal College of Physicians on the subject of cholera precautions:—

Local Government Board, Whitehall, S.W.,
Aug. 29th, 1892.

SIR,—I am directed by the President of the Local Government Board to inform you that the Board are prepared, in case of the extension of cholera into England and Wales, at once to issue regulations, under the Public Health Act, 1875, and the Public Health (London) Act, 1891, to the local sanitary authorities.

These regulations will, amongst other things, require the local sanitary authorities to provide and to dispense, without charge, "medicines and medical appliances" for the sick.

The Board consider that the local authorities of England and Wales would attach great value to the medicines which the Royal College of Physicians consider to be best adapted to the immediate medical treatment of patients suffering from cholera, choleraic diarrhœa or diarrhœa.

And I am therefore to ask that the President of the Royal College of Physicians will be good enough, at as early a date as possible, to communicate to the Board prescriptions as to the remedies which the College may think most suited to the requirements in view.

I am, &c.,
HUGH OWEN, Secretary.

The Registrar, Royal College of Physicians,
Pall-mall East, London, W.

Royal College of Physicians, Sept. 3rd, 1892.

SIR,—In complying with the request of the Local Government Board to furnish it with instructions for the management of health in view of the prevalence of diarrhœa and of cholera, the Royal College of Physicians desires to say that the instructions herewith submitted are not intended either to occupy the general ground of prevention so ably and admirably covered by the medical advisers of the Board, or to supersede the necessity of immediately summoning medical assistance to those stricken with disease. They are meant to be followed only when the assistance of a doctor cannot be procured and when diarrhœa has not developed into cholera. The College proposes no instructions for the treatment of cholera. Every case of this disease requires separate consideration and management; no stereotyped plan of treatment would prove to be either wise or safe; and usually before the choleraic nature of an attack could be established medical assistance would have been procured.

The chief instructions to be followed for the prevention of diarrhœa and of cholera are herewith appended:—

1. As cholera is not, in the ordinary sense of the term contagious, as it is rarely, if ever, communicated, like small-pox or scarlet fever, directly from person to person; as it is probable that those engaged in attendance upon patients suffering from this malady are not more liable than others to become attacked with it; and as it is certain that physical and moral depression favour the reception and development of the disease, apprehensions should be allayed, confidence encouraged and that manner of living pursued which experience has proved to be conducive to the highest health.

2. The house should be clean, light, thoroughly dry and well ventilated. Air shafts, traps and drains should be in perfect working order. Dustbins should be frequently emptied and no decaying matters of any kind should be permitted to remain in or near the house. Cisterns, reservoirs, casks, jars and pipes used in the preserving, carrying or transmitting of water should be frequently inspected and carefully cleansed. All connexions of waste pipes with drains should be severed.

3. As water is one of the chief agents by which choleraic infection is conveyed, all water employed for personal and domestic use in the household should be scrupulously protected from contaminations of every kind; and if any doubts of its purity arise the water should be boiled, filtered and consumed within twenty-four hours. Boiled and filtered rain-water is probably the best of all waters for use at this time.

4. The dietary should consist daily of three or four simple but nourishing and ample meals, taken at regularly recurring times. The

meals may consist of any sort of animal food, fresh and thoroughly cooked, of bread, potatoes, well-boiled green vegetables, if they agree, and of plain farinaceous puddings, or of simply cooked, wholesome fruit.

Milk should be boiled before use.

Alcoholic beverages should be taken in great moderation, and only at the greater meals, such as at dinner and supper.

It is desirable to avoid soups, tinned or otherwise preserved provisions, raw or stale vegetable, unripe, over-ripe, or decaying fruits, pastry, cheese, nuts, hard or indigestible things of every kind, malt liquors turning "hard," ginger beer, strongly ascescent sparkling wines, coarse oatmeal gruel, messes between meals, and either long fasts or too frequent feeding.

5. All provisions should be procured fresh and fresh, but when some storage is unavoidable the most scrupulous care should be taken to protect them from contamination by impure air or water.

Cooking utensils should be scalded after use and kept carefully clean.

6. Avoid the use of strong aperients, and especially of strong saline aperients. If there is obstinate constipation take at bedtime either a teaspoonful of Gregory's powder or one or two teaspoonfuls of castor oil.

7. Avoid excess and irregularities of every kind, over fatigue, prolonged watchings, emotional excitements, undue mental strain, and all such things as irritate and exhaust the nervous system.

Especially avoid the frequent use of alcoholic or of any stimulants to cover recurring sensations of sinking, malaise, or depression.

8. Take moderate exercise twice daily, follow early hours, and aim at leading a regular, an occupied, and a tranquil life.

CONCERNING THE MANAGEMENT OF LOOSENESS OF THE BOWELS.

9. If, notwithstanding this careful regulation of the manner of living, looseness of the bowels should set in, send immediately for medical assistance, since without personal examination and direction no case of this kind, arising in such circumstances, can be satisfactorily or even safely managed. But if medical assistance is not immediately available, follow the subjoined instructions until the doctor arrives.

10. Choose, if practicable, a bright, airy room, go at once to bed, keep quite warm, and if troubled with cramps or pains apply hot applications to the entire stomach.

11. Take freshly prepared fluid or semi-fluid food in quantities of a large cupful at a time regularly every three hours. Such food may consist of boiled milk thickened with rice flour, baked flour, or biscuit powder: of tea made with boiling milk infused about five minutes, and having toast, biscuits, or rusks soaked in it; of farinaceous puddings of the nursery sort; of any kind of gruel, except that made with coarse oatmeal; of meat jelly, of beef tea, or of mutton, chicken, or veal broth.

If pain persists with depression or faintness, take a tablespoonful of brandy or of whisky in a small claret glassful of hot water after meals, twice, thrice, or four times in the course of the twenty four hours, but not oftener than is absolutely required for relief.

12. If thirst becomes excessive, sip from time to time small quantities of iced water just sensibly acidulated with fresh juice of lemons or with aromatic sulphuric acid.

13. As soon as possible after looseness of the bowels has begun, take in capsules or in hot milk, or in any other manner preferred, two teaspoonfuls of castor oil. If when the action of the oil may be fairly supposed to have ceased the looseness increases to a watery diarrhœa, let the hips be well raised and carefully inject into the bowels a quart or more of hot water containing two drachms of benzoate of soda or thirty grains of tannin. Furthermore, if there be much pain in the bowels, fifteen to thirty drops of laudanum may be added to the injection. The injection should be retained as long as it is comfortable to the patient, and it may be repeated once or twice daily during the continuance of the diarrhœa and until medical assistance has been procured.

14. After the administration of the injection, if one has been found necessary, the following mixture should be taken at intervals of from three to four hours, according to the urgency of the symptoms:—

℞.—Mist. Cretæ Aromat. 1 oz., Tinct. Camph. Comp. ½ drachm, Tinct. Chlorofor. Comp. 20 drops, Sp. Ammon. Arom. 20 drops, Cerii et Bismuthi Salicyl. 5 grains, Ess. Menthæ Pip. 10 drops. Fiat dos. 1.

15. Should this mixture disagree, or in twenty-four hours fail to give relief, the mixture following should be substituted and taken every three or four hours:—

℞.—Acid. Sulph. Arom. 15 drops, Tinct. Camph. Comp. ½ drachm, Tinct. Chlorofor. Comp 20 drops, Tinct. Coto. 20 drops, Syrupi Aurant Flor. 1 drachm, Aq. Menthæ Pip. ad. 1 oz. Fiat dos. 1.

16. From the first appearance of looseness of the bowels the body should be washed with warm water night and morning and quickly dried; soiled bed or other clothing should be immediately disinfected and destroyed.

A cheap and efficient disinfecting fluid is recommended by Dr. Thorne Thorne, and is thus prepared:—Dissolve half an ounce of corrosive sublimate and five grains of commercial aniline blue in three gallons of water and add thereto one fluid ounce of hydrochloric acid. Preserve in earthenware jars or wooden tubs.

17. All further general precautions necessary to be taken at this time are admirably set forth in the memorandum issued on Aug. 26th by the medical officer of the Local Government Board.

I have, &c.,

ANDREW CLARK, M.D., President of the Royal College of Physicians.

WM. HENRY ALLCHIN, M.B., Vicarius for Edward Liveing, M.D., Registrar.

To Sir Hugh Owen, K.C.B.

The following notice has been issued from the General Post Office:—

Information has been received from the Greek postal authorities that no parcel mails from this country will at present be allowed to enter Greece, and that no sample packets must be included in the ordinary mails. Until further notice, therefore, it is useless to post either sample packets or parcels intended for conveyance by parcel post, addressed to Greece.

THE CHOLERA EPIDEMIC IN PARIS.

Our Paris correspondent informs us that the outbreak of cholera in that city appears to be stationary in its progress. The figures are:—

		Fresh cases.	Deaths.
Sept. 8th	Paris	63	49
,, ,,	Suburbs	22	12
,, 9th	Paris	47	27
,, ,,	Suburbs	32	19
,, 10th	Paris	32	12
,, ,,	Suburbs	19	17
Sept. 11th	Paris	34	17
,, ,,	Suburbs	10	4
,, 12th	Paris	32	12
,, ,,	Suburbs	13	11
,, 13th	Paris	33	12
,, ,,	Suburbs	26	6

At Havre the situation has greatly improved, only twenty-four cholera patients being (Sept. 13th) under treatment at the Eastern Hospital. The municipality has just engaged 400 scavengers, whose duty it is to water and clean the streets. The decree establishing a sanitary cordon on the frontier has been (Sept. 12th) extended to all parts of France and Algeria for all entries from cholera contaminated ports.

THE CHOLERA IN GERMANY.

Our Berlin correspondent states that the statistics of the cholera epidemic in Hamburg have been revised by the Statistics Office there, with the following result:—

	Cases.	Deaths.
On and before Aug. 20th	86	36
On Aug. 21st	83	22
,, 22nd	200	70
,, 23rd	272	111
,, 24th	367	114
,, 25th	673	192
,, 26th	991	315
,, 27th	1101	456
,, 28th	1506	428
,, 29th	982	394
,, 30th	1086	484
On Aug. 31st	858	395
On Sept. 1st	843	394
,, 2nd	809	478
,, 3rd	777	437
,, 4th	679	293
,, 5th	582	281
,, 6th	485	258
,, 7th	419	224
,, 8th	348	160
,, 9th	350	150
,, 10th	213	113

The total population of Hamburg and the territory belonging to it is 640,400; the number of cases hitherto amounts to 20·7 per 1000, the number of deaths to 9·1. In the week which ended on Aug. 20th the death-rate of Hamburg and its suburbs was 32·7, in the following week 150.

Army Surgeon Dr. Weisser, a former assistant of Professor Koch, is examining the water of the Elbe for comma bacilli. On July 9th, 1890, the Senate of Hamburg resolved to erect filtering works at an expense of seven million marks (nearly £350,000), but this plan has not yet been executed. At its meeting on the 7th inst. the Berlin Medical Society discussed the subject of cholera. Professor Virchow, who presided, declared the fact that, though isolated cases had been carried to great distances from Hamburg, no epidemic had broken out anywhere in Germany except in that city, to be highly reassuring. He regarded disinfection on the frontiers as inexpedient. River water was a very essential element in the spread of cholera.

As there is a brisk traffic on the water-way between Hamburg and Berlin, and it is well known that bargemen try to conceal cases of illness that occur among them, a steamer with a doctor on board has been ordered to cruise on the Howel. The doctor has to examine the inmates of all the barges, and send those he suspects of having cholera to a hospital improvised for the purpose.

THE CHOLERA AT GLASGOW.

The following is a short synopsis of the notes on the two cases of cholera under treatment at the City of Glasgow Fever Hospital, Belvidere. Dr. W. A. Parker, has been good enough to furnish the notes.

CASE 1.—M. D——, aged about thirty-five, was admitted at 1 A.M. on the morning of Aug. 27th. No accurate history could be got from the patient, but he stated that he had been ill for four days, and he had certainly diarrhœa throughout the 26th.

On admission the eyes were sunken; hands and feet dark, cold and shrunken; no marked perspiration, with a stricken look; nose red and congested; very restless, with palpitation; pulse miserably small and poor, and at times imperceptible. At 1 and 3.15 A.M. there were milk-like motions; also everything was rejected, there being copious watery vomiting with flocculent masses in it, coming in sudden gushes; thirst excessive; the tongue showed a light white fur, but was moist; there was pain over the kidneys and severe pain across the chest; an ounce of urine was passed, loaded with

albumen. At midnight the pulse was better (90), also the general aspect was less livid and blue; the pupils were normal in size, reacting to light; the vomiting continued, though less frequently; there had been no further motion of the bowels, but another half-ounce of urine had been passed; the voice was less peculiar and husky.

Aug. 28th: Distinctly better; surface warmer and less livid; pulse stronger; restless, with tendency to delirium; no motion of bowels, and only half an ounce of urine passed; vomiting less; thirst continues; hiccough distressing.—29th: Vomit bilious; took nourishment better; hiccough less; no urine or motion passed; vomited two round worms.—30th: The temperature reached 98·2° for first time (previously subnormal); thirteen ounces of urine passed, with 1-12th column of albumen; vomiting and hiccough slight.—31st: Forty-one ounces of urine passed; much less albuminous.—Sept. 1st: Marked muscular tenderness about legs and great pain on bending knees; tongue furred again; breath foul; copious bile-coloured stool after enema.—2nd: Muscular tenderness about legs and cramping abdominal pains; tongue covered with thick yellow fur; urine improving; no vomiting.—3rd: Three loose greenish-yellow motions, followed at 4.50 P.M. by a sudden and seemingly involuntary motion of a loose, green, offensive kind; otherwise seems well.—4th: Thirst continues; four loose green motions; scanty, discrete, papular, itchy eruption on flexor aspects of arms.—5th: Urticaria-like rash continues and involves trunk and limbs; eight loose green motions; evening temperature 100·6°; pulse 100, thin and feeble, but regular; skin has a very peculiar offensive odour.—6th: Evening temperature 99·4°; nine loose, green, chopped-vegetable-like motions; urine improving; pulse better; rash still bright.—7th: The patient had three loose, green, chopped-vegetable motions of acid reaction before 11 A.M., but none since; tongue cleaning and he seems better; rash is fading; best seen on extensor surfaces of limbs. The urine is almost free from albumen; its reaction has all along been acid.

The treatment on admission was dilute sulphuric acid with opium; free stimulation with brandy; iced water *ad libitum;* since then the treatment had been symptomatic. The temperatures were as follows in M. D——'s case:—Aug. 27th: morning, 96·4°; evening, 95°. 28th: morning, 97·6°; evening, 96·4°. 29th: morning, 96°; evening, 97·6°. 30th: morning, 97°; evening, 98·2°. 31st: morning, 98·2°; evening, 98·2°. Sept. 1st: morning, 97·6°; evening, 98·6°. 2nd: morning, 97·6°; evening, 98·6°. 3rd: morning, 97·6°; evening, 97·8°. 4th: morning, 96·4°; evening, 97·4°. 5th: morning, 98°; evening, 100·6°. 6th: morning, 98°; evening, 99·4°. 7th: morning, 97·8°; evening, 97·2°.

CASE 2.—F. A—— was admitted between 9 and 10 A.M. on August 27th. She stated that she had been suffering from diarrhœa since the 24th, vomiting commencing soon after. Headache had all along been present and cramps in the feet were early and severe. At the onset there was a sense of great heat in the head, chest and abdomen, which in the abdomen lasted into the stage of collapse.

On admission the patient had a temperature of 94·6°. The surface was cold, the limbs especially; no distinct perspiration. The pulse was 100, poor and soft. There was great restlessness; eyes sunken, with sluggish, dilated pupils; nails markedly livid; peculiar husky voice. She complained of cramps in front of the legs and across the chest, with a sense of abdominal heat; frequent watery vomit. The patient was menstruating (sixth day); no urine passed; no motion (bowels were moving up to admission); great thirst.

Aug. 28th: Stronger pulse; less lividity; warmer surface; an ounce of urine passed; round worm vomited; three copious rice-water motions.—29th: Vaginal discharge severe; flushed and distressed looking, with cold extremities; headache and slight cramps in legs; three rice-water motions; twice in the evening the vomit was bilious; slight hiccough; two ounces and a half of urine passed; temperature normal for first time in evening, previously subnormal.—30th: One slight rice-water motion; vomit bilious; six ounces of urine passed; discharge from vagina much less.—31st: Nineteen ounces of urine passed, loaded with albumen, but no blood; scarlet-like blush on limbs and face.—Sept. 1st: Passing urine freely; no vaginal discharge, vomit or motion; rash fading.—3rd: Albumen decreasing in urine.—4th: Two copious green motions after castor-oil enema.—6th: Three copious loose yellow motions after taking two drachms of castor oil; urticaria-like rash beginning to appear on trunk and arms, just as in the other case, but quite different, and taking no drugs.—7th: Rash more general and more of the urticaria type, but left a staining; otherwise well. The temperatures were as follows:—Aug. 27th: morning, 94·6°; evening, 96·2°. 28th: morning, 97·0°; evening, 97·8°. 29th: morning, 97·6°; evening, 98·6°. 30th: morning, 97·0°; evening, 97·6°. 31st: morning, 97·4°; evening, 98·4°. Sept. 1st: morning, 97·2°; evening, 98·4°. 2nd: morning, 97·4°; evening, 97·6°. 3rd: morning, 97·2°; evening, 97·6°. 4th: morning, 97·8°; evening, 98·8°. 6th: morning, 98·4°; evening, 98·2°. 7th: morning, 98·2°; evening, 99·2°.

The treatment was, as in the other case, dilute sulphuric acid and opium at first, with symptomatic treatment afterwards. Free stimulation with brandy and ice-water *ad libitum* were also had recourse to.

Belvidere.

THE CHOLERA IN BELGIUM.

(FROM OUR SPECIAL CORRESPONDENT.)

THE SANITARY CONDITION OF ANTWERP.

AFTER what I had seen and described last week my first care was to call upon the town engineer. At the Town Hall I was received with much courtesy and every information placed readily at my disposal. The drainage of Antwerp is a matter of some difficulty, as the ground is flat and there is hardly any fall whatsoever. On the other hand, there is a powerful tide in the river Scheldt, which can be and is extensively utilised for flushing purposes. Almost all the streets of Antwerp have sewers of various shapes and sizes, some well built and some badly built. The main drainage system may be described as the conversion of the old historical moats into main sewers. As one set of fortifications composing the city wall was pulled down and a larger wall built further off, what had served as the moat of the inner wall became the main sewer. Antwerp has been enlarged in this manner seven times. The last of these moats now constitutes the magnificent semicircular boulevard known as the Avenues of Commerce, of the Arts and of Industry. Here is an enormous sewer, in many places more than sixteen feet wide, in which boats are easily navigated. At high tide this immense underground canal is filled with water and at low tide the water is discharged into the various sections of the sewers, which are thus flushed out, the whole ultimately reaching the Scheldt. At Antwerp this river is sixty miles from the sea, and a third of a mile broad and thirty feet deep at high tide. In spite of the powerful flush thus given I noticed some very characteristic and unpleasant odours emanating from the sewers in the neighbourhood of the cathedral. I was told also that a number of sewers converge and meet together under the church of St. Paul, where they constitute a large lake. The pillars of the church are sunk through the sewage to find a foundation underneath, and it appears that it is a curious sight to visit, in a boat and with torches, this sort of crypt full of sewage. I need hardly point out that this does not correspond with any known and approved system of drainage. A sewer, on the contrary, should be small—small enough to be at least half filled with water every day. It can then be considered self-cleansing if the fall is sufficient and the flush ample. In large sewers, where the water is shallow and travels slowly, dangerous deposits are made and sewer gases are extensively generated.

According to a regulation brought into force some twenty years ago drainage into the sewers was forbidden except in the case of kitchen water and rain water. This regulation decreed at the same time that houses should be provided with well-built, water-tight cesspools. The closets were each to have a syphon trap to prevent the gases from the cesspool penetrating the houses or courts, and finally the cesspools were to be emptied by the pneumatic system, which draws the material from the cesspools by suction and burns the gases in the fire of the engine. The operation thus carried out causes but little or no nuisance. Such is the Antwerp system of drainage, a system that has been condemned by the immense majority of hygienists, which term, I take to comprise doctors, chemists, architects and engineers. But, bad as the system is, the results would be much more favourable if it were strictly applied. A census taken on Dec. 31st, 1890, establishes that there are 29,335 houses in Antwerp, inhabited by 238,788 persons. Last year an

inquiry was made by the municipality as to the manner in which the inhabitants of Antwerp dispose of the matter contained in their cesspools; 101 persons, it was then ascertained, sold the contents to agriculturists, who fetched it away; then 910 persons emptied their cesspools on to their own gardens; 355 other persons did the same, but paid the tax to the town as if they had their cesspools emptied by the pneumatic system. Thus we have a total of 1566 houses where the emptying of the cesspools must cause a fearful nuisance, since the pneumatic system is not employed, and out of this total in only 101 cases is the nightsoil taken out of the town; for the rest it is used to manure gardens within the town. In 237 houses (if the technical Flemish word was correctly translated into French) there were cesspools which were expressly constructed to allow the contents to leak away into the subsoil. There were 134 houses where the inhabitants had no knowledge whatsoever as to the situation of their cesspools, and therefore these cesspools had evidently not been emptied during the existing tenure. In twenty-four cases the cesspools formed part of manure heaps, and in thirty-four houses the opening to the cesspool was under a wall or pavement, and considered inaccessible. Finally, there were 1020 houses that drained direct into the sewers. Thus we have a grand total of 3015 houses where the regulations drawn up by the municipality are not applied. To what extent the numerous houses occupied by poor people, where the cesspits or middens have no covering, are comprised in the above enumeration, I am unable to say. There was no attempt made to deny the existence of the grievance denounced in my last letter. It is acknowledged that in the poor quarters, and more especially in the quarters where most of the cases of cholera have occurred, there are numerous middens, and that the odour from these middens escapes into the yards and houses, for they are only covered with a wooden seat. There is no pan underneath the hole in the seat, still less is there a syphon trap below the pan. Such closets are contrary to the regulations, and yet they are tolerated to a wholesale extent. Close to these middens, sometimes only separated by a narrow brick wall, are wells from which the drinking water is taken. What is more remarkable and more reprehensible is the fact that this state of things prevails precisely in that part of the town where I should have imagined the authorities would have exercised the greatest severity in the application of their regulations. Here live the poorest inhabitants of Antwerp, and here will be found the most over-work, under-feeding, drunkenness and overcrowding. Yet cleanliness prevails; the floors of the rooms are constantly scrubbed, the bedding is fairly clean, the seats of the closets are washed and rarely soiled. In London such a population would be infinitely more dirty. In similar quarters of London there is a great deal more superficial dirt, but there would never be such organic defects of construction. The lower classes in Antwerp have done as much as can be expected from people ground down by poverty. It would be a great benefit if the London docker and his neighbours could imitate the Flemish cleanliness, and it is a thousand pities that the Antwerp authorities do not support this excellent disposition of the population by at least applying the regulations they have themselves drawn up. The authorities have full powers to do this. The local medical commission has the right of inspection. On a report of this commission the burgomestre can order the necessary alterations and repairs, and he can insist that they should be undertaken within a fortnight of the time when the notices are served. Now, from Jan. 3rd, 1888, to Sept. 2nd, 1892, the number of houses or cases of sanitary defects reported amounted to 1002. The present condition of Antwerp shows that this was absolutely insufficient, though I do not desire to infer that the local medical commission had in any way neglected its duties. My object rather is to point out that Antwerp urgently needs a well-paid, highly qualified sanitary inspector with a staff of assistants whose sole business it shall be not to wait till complaints are made, but to go from house to house and ferret out every case where the regulations are not strictly enforced. Bad as these regulations are, their application would be a considerable improvement on the present state of affairs. Every householder could then be made to trap his closets, close over his cesspools and to empty them by the inodorous pneumatic system.

With regard to the water-supply, it would not be so easy to bring about the necessary improvement. There is a private company which provides Antwerp with water. This water is taken from the Nethe, near Marlines; not at the source, but in the very middle of the river. The Nethe falls into the Roupel, which, in its turn, joins the Scheldt. The water is purified by being mixed with fragments of iron, so that its salts coming in contact with the air form oxides of iron. It is then filtered through about four feet of sand and delivered in the houses of Antwerp under a pressure of three and a half atmosphere, which, however, can be increased to five atmosphere in case of fire. This water, I was assured by several persons, has a taste of sand and it is not liked by many of the inhabitants. Though the chemical analysis shows the presence of ammonia, the sanitary medical authorities look upon the water as safe because it bears successfully the test of bacteriological examination. In a word, the water is considered not nice, but wholesome, and is therefore infinitely safer than the water, generally more pleasant to the taste, taken from wells in close proximity to cesspools. The maximum amount of water supplied by the company in one day was 9000 cubic metres. The usual consumption varies from 4000 to 5000 cubic metres per day, and this could be raised to 15,000 cubic metres. It is estimated that in Antwerp about 45,000 persons receive the company's water, so that four-fifths of the population drink water from private or public wells. It is difficult to conceive how, in the face of such a fact, the cesspool system can be maintained. Obviously cesspools and wells cannot be allowed coexistence. One or the other, if not both, must disappear. Most hygienists condemn both wells and cesspools when either the one or the other is found in a town. None defend the combination and proximity of the two.

Occasionally a police inspector at Antwerp takes a sample of water from a private well and causes it to be analysed. If the water is found to contain a notable quantity of nitrates the owner of the house is summoned to provide suitable drinking water under the penalty of having the dwelling closed as unfit for habitation. But he cannot be compelled to take the water of the company; such compulsion would imply the employment of police force to promote the financial interests of private persons. Had the water-supply been in the hands of the municipality the case would be altogether different. Compulsion could then have been brought to bear, as it could not be said that such coercion was exercised in the interests of individuals. The interests served would have been purely public interests—those of the public health on the one hand and those of the public purse, or municipal receipts, on the other. As matters now stand, when a well is condemned—a rare occurrence, unfortunately—the landlord has simply to dig another well a few yards off, where, doubtless, the water at first obtained is not contaminated. The town, it should be observed, has reserved for itself the right of opening ten public fountains in poor districts, where the company's water is given gratuitously; and it is a significant fact that some other public fountains which supplied well water have had to be closed quite recently, because these waters were recognised to be impure. At a certain Coöperative Bakery and Club, where 7000 to 8000 kilogramme loaves of bread are made and baked per day, the water to make the bread is taken from a well in proximity with three cesspools. At the club many trade societies meet, eat and drink. There are often several hundred workmen on the premises, and they help to fill the cesspool close to the well from whence they derive their drinking water. If once this well is contaminated the most widespread mischief will result.

The water supplied to sea-going ships is the water of the company, which, as already explained, is the safest available at Antwerp. It will interest English travellers and tourists to know that even this water is rarely taken on board the Harwich and Antwerp boats. These passenger steamers are provided with water at Parkeston Quay. They only take in water at Antwerp when the ship's supply has run short in consequence of an exceptionally large crowd of passengers. This of course only occurs during the height of the tourist season. On calling at the company's offices to make inquiries I was assured that no water had been taken on board at Antwerp since the outbreak of cholera. Indeed there was no need of doing so, for the number of passengers has been greatly reduced since the cholera scare. This is much to be regretted, for unjustifiable panics supply arguments to those who urge that the truth should be concealed. Even if instead of a few cases the cholera was raging at Antwerp, the landing stage of the Harwich steamships is far removed from the town, and there are no habitations near. There can be no risk therefore in stepping from the steamer to the train that awaits the arrival of the boat.

If the water-supply of Antwerp is deficient and the drainage system bad the town has at least the advantage of possessing an admirable hospital. It is built on the circular system, especially designed for contagious diseases, and provided with both mechanical and natural ventilation. But the hospital is well known. It is a model establishment; it has been visited by hygienists from all parts of the world and has been very generally admired. Up to Sunday last 101 cholera patients had been treated in this establishment. If the patients were brought in a carriage the carriage was fumigated, then thrown open and left exposed to the air for twenty-four hours. Those persons who bring the patient or who inhabit the same house are conducted to the hospital bathing department and compelled to take a hot bath. While in the water their clothes are disinfected in a dry-heat stove which is always kept ready. These persons are then retained in the hospital or sent to the sanitary depôt for twenty-four hours. In the interval the house whence the patient has been taken is thoroughly disinfected. The hospital authorities hope shortly to be able to replace their dry-heat stove by a stove where the clothes will be disinfected by steam superheated under pressure. To be ready for emergencies, and as an experiment, a wooden hut capable of holding thirty patients has been built in a field by the side of the hospital. It was thus ascertained that huts of this description could be put up in five days, and there is plenty of room for more huts in the same field. As yet, however, all the patients have been treated within the walls of the hospital. If, therefore, in respect to general sanitation, drainage and water-supply, there is much in Antwerp calculated to encourage the development of cholera and other diseases, very excellent provision is made to deal with each case and to stamp out the danger of infection, if this has not already reached the drains.

As there have been cases of cholera in all parts of the town there is no disguising the fact that a widespread epidemic may break out in Antwerp, more probably next summer than this autumn. The authorities, let us hope, have therefore the whole winter before them to make a house-to-house visitation, commencing of course with the poorest quarters. All private wells near to cesspools should be closed, all cesspools should be covered over and closets with proper traps provided. This much at least could be completed before next summer, though this would only be patchwork and a temporary mitigation of existing evils. Ultimately a better water-supply must be organised and a proper system of drainage created. As Antwerp is exceptionally flat, it is in such a town that the separate system would be most appropriate. The existing sewers could continue to convey the rain-water to the river, while small pipes placed within these sewers would deal with the slop-water and soil. It follows of course that cesspools would be abolished. Till this is done Antwerp cannot claim to be considered a sanitary town. Nor is there any reason to believe that these indispensable reforms will be long deferred. If such benighted places—from a sanitary point of view—as Marseilles can be induced to build a proper drainage system, Antwerp will not tarry in the rear. The authorities at Antwerp have already shown much energy and good will in this respect. They have pulled down abominable rookeries, built magnificent streets and reduced the death-rate to about 22 per 1000 per annum. They may be trusted to continue and complete the good work begun.

Antwerp, Sept. 12th.

A VISIT TO BOOM.

Dr Desquin, President of the Provincial Medical Commission, having, with much kindness and courtesy, allowed me to accompany him on a tour of inspection, I have just visited the small town of Boom. It took half an hour to reach this place by the railway from Antwerp, and as we arrived when the tide was out, I had an opportunity of seeing the dirty character of the mud deposited on the banks of the Roupel. The water itself was very thick and muddy and here and there I noticed large quantities of shining grease floating on the surface. At the Town Hall of Boom we found the Burgomaster, the five local practitioners, the chief of the police and other persons, who together constitute the Local Sanitary Commission, waiting to receive us. I avail myself of this opportunity of thanking these gentlemen for their courtesy and the willing assistance they rendered. The Commission at once proceeded to business and it was decided that the local fête or kermesse which was to be held in a fortnight's time should be indefinitely postponed. Boom, I should explain, is a large district almost wholly given up to brick and tile making. Along the water's edge, for a considerable distance, there are numerous small landing stages where barges come to load bricks. The Commission discussed lengthily as to how these barges could be watched, and it was decided that this duty should be left to the two *gardes champêtres*—rural functionaries who act as gamekeepers and as constables. They are to call for medical assistance if there be any illness on board the barges. The first two cases of cholera did not, however, occur near the river or where the bargemen usually congregate, but in the Noveren district, which is some way inland and close to the railway station. This was on the 26th and 27th of August, so that the cholera took ten days to travel from Antwerp to Boom. Then two bargemen who had caught cholera at Antwerp arrived off Boom and died on board. On the banks of the Roupel, at right angles with the river, are numerous rows of wretched little cottages inhabited by very poor people. These we visited, but more especially one particular row, where fifteen cases of cholera and eight deaths had occurred. In one cottage, inhabited by seven people, four of them had died from cholera. Attempts had been made to disinfect this cottage, but it was in so dilapidated a condition that the sulphur fumes escaped from all sides. The cottage was therefore declared unfit for habitation, and has been closed. It is also proposed to condemn in a similar manner other cottages in the same terrace, which stand back to back, have no through ventilation, and where four other inhabitants have died from cholera. Altogether there had been seventeen deaths from cholera at Boom, counting from Aug. 26th to Sept. 10th.

On visiting the whole of this waterside district the social and sanitary condition appeared so deplorable that it seems almost hopeless to attempt to cope with the approaching epidemic. There are cottages which are actually rented for one franc per week. What sort of accommodation can be expected for £2 2*s.* per annum? In some cases the condition of these dwellings is so bad that the landlord would be delighted if the sanitary authorities ordered them to be burnt. This, indeed, was about to be done in several instances, when it occurred to the authorities that in such cases the owners of the property would have to be compensated from the public purse. Consequently the places are simply closed by the police and declared unfit for habitation. The owners must then at their own expense render the house fit for habitation before the police will raise their interdiction.

All these cottages have midden closets. For one terrace there was a collective closet consisting of seven seats, side by side in a long passage with one single door, and no division whatever between the seven seats. Men and women of all ages go there together, and there is no sort of privacy. The holes have no covering; they gape over this elongated privy and allow all the foul emanations to freely escape in the air. The Sanitary Commission, in the face of this revolting promiscuity, determined, then and there, to issue instructions to all the householders of the districts ordering them to provide separate closets for each house. Wells are not so numerous here as they are in Antwerp; still there is a well under the row of cottages where eight of the inhabitants have died from cholera. It was curious to note with what reluctance the inhabitants gave any sort of information as to the water they drank. They very unanimously declared that the water of the Roupel made the best coffee, and they showed us the water from the wells; but they so twisted their answers to our questions that there was no finding out which water they had drunk. It seemed as if they thought it a disgrace to drink water, though they would wax eloquent on a particular brew of beer or a special brand of Schiedam. On making further inquiries, I discovered that, after all, it is a sort of disgrace to drink water, for it appears plain water is rarely consumed except to assauge the thirst and fever experienced on the morrow of a drunken bout. And this perhaps also accounts for the fact that a large proportion of the victims of cholera are drunkards. When the system is deranged by alcoholic excesses they will drink on an empty stomach several pints of more or less impure water. It is not surprising that the results should occasionally prove fatal.

Not only old but new cottages have been built at Boom without any sort of regard for the health of the inhabitants. We visited one row of cottages built in a hollow considerably below the level of the road. Behind a portion of these cottages there was a ditch full of foul, stagnant water, which, being deep down, cannot be drained away. Then there rose,

close to the back of the cottages, the high wall of a brick kiln, and against this wall were several closets and middens. Hot, foul steam came up from these cesspits, produced by the heat of the bricks that were baking on the other side of the wall. The cottages thus situated are new, and they stand on refuse which had been thrown into the hollow, but not in sufficient quantity to fill up this hole. The slop water from these cottages cannot possibly drain away; it must sink into the soil or stagnate on the surface.

Boom has a large hospital which was constructed in 1843, and is about as insanitary and unsuitable a building for the purpose as could well be devised. It has huge Gothic windows like those of a church, which, however, cannot be opened. Only at the apex of the Gothic arch is there a small rosace, which, by the skilful pulling of strings, may be partly opened; the ventilation is absolutely insufficient. The cholera patients have not as yet, however, been nursed in this building. They are put in a sort of barn situated in the garden of the hospital. It is a wretched structure, but it has better ventilation. The floor consists of brick tiles placed directly on the earth. Above these are numerous rafters—angles, corners, ledges and places of all sorts where dirt accumulates safe from the reach of broom or duster. The patients have wooden bedsteads and straw mattresses. There is a poverty-stricken, gloomy, grimy look about the whole place which is most dispiriting. Nevertheless, I was assured that the inhabitants of Boom considered themselves very fortunate, for at least they have a hospital, while at Bornheim, for instance, the cholera patients have been put in the schoolroom. It remains to be seen whether parents will very readily send their children to this school when the epidemic is over.

Some remedies for the state of affairs at Boom suggest themselves as effective if properly and strictly carried out. At the end of every terrace leading to the Roupel notices should be posted, if possible, forbidding, in any case, the inhabitants to drink water from the river. Fortunately most of the territory at Boom consists of some two feet of earth, then four to six feet of sand, and after that a thick, impervious layer of clay. Wells in all directions should at once be sunk below the clay strata. If the upper parts of such wells as they go through the earth and sand are carefully cemented, so as to exclude all surface water, it is wellnigh certain that the water taken from below the clay will be pure. This measure will not entail any very great expense and its urgency is undeniable; but it will be no use digging these new and safe wells unless this be followed by the rigorous filling up and closure of all the existing shallow surface and unsafe wells. While this work is proceeding it will also be very useful to condemn as unfit for habitation some of the worst cottages and instruct owners as to necessary improvements. Finally, an order could and ought to be issued forbidding the construction of any new habitations whatsoever without first submitting the plans to a competent sanitary authority.

A VISIT TO THE QUARANTINE STATION AT DOËL.

In a Government steamer belonging to the police of the Scheldt and placed at the service of the Scheldt Sanitary Commission I have been able to visit the quarantine station at Doël. This is a small village opposite the Lillo Fort and not far from the Dutch frontier. The journey from Antwerp by steamship takes rather more than an hour. The river at this point is much broader than at Antwerp, and there is plenty of room to anchor a large fleet, even though, according to the existing rule, each ship must keep at a distance of at least 200 metres from her nearest neighbour. There were eleven ships in quarantine when we arrived at Doël. As yet the largest number retained at one and the same time has been seventeen ships. There are military posts on shore to prevent any attempt to land from the ships in quarantine. Anyone convicted of such an attempt may be sentenced to ten years' imprisonment. According to the old law of 1831 the penalty was death. At present all ships coming from infected ports, such as Havre, Hamburg &c., are put in quarantine and kept there till seven days have elapsed since the date of their departure from the infected port. Thus the duration of the journey is counted as forming part of the seven days' quarantine. Dr. Anthoon is in charge of the station at Doël; with one or two exceptions, in which are comprised the Harwich passenger ships, he boards every vessel that passes. According to the newest regulations these ships must show a declaration—signed by the Belgian consul—that there is no cholera in the port whence they sailed. Dr. Anthoon informed me that since the establishment of the quarantine he had not found a single case of illness on board any one of the ships. Outside Doël and near a fort there is a lazaret where patients from the ships in quarantine are to be taken; but, so far, not a single person has been brought to this place. What is more, among the 2233 inhabitants of Doël there is no illness of any description. "We are taking a holiday," Dr. Anthoon exclaimed.

The ships in quarantine are now being made to empty their supply of drinking water into the river. Perhaps this may further contaminate the Scheldt. On the other hand, the ships themselves run some risk of being contaminated by the water given to them to replace that which they have been compelled to throw away. This water comes from Doël, but there is no water at Doël, except that which is taken from wells, and of course there are cesspools all about the place. To make matters worse, the water for the ships, after it is extracted from the wells, is stored in a reservoir situated close to the cemetery. It is true that at Doel there is no illness, no diarrhœa whatsoever; but how long will such an exceptional state of things continue? There is admirable apparatus at Doël for disinfecting by steam under pressure. There should also be an apparatus for sterilising all water before it is supplied to the ships in quarantine. A very sharp watch, I had occasion to observe, is kept as to the character of the cargo on board the ships, and anything suspicious, such as rags, old paper, old clothes &c., is disinfected at Doël. It is now proposed to place a pontoon on the river, where the disinfecting operations will be carried out, and thus the trouble and risk of landing the articles will be avoided. According to the last news there have been 103 cases of cholera treated at the Antwerp Hospital, to say nothing of the cases that were not removed to the hospital. In witnessing the strict measures of quarantine imposed at Doël I could not help thinking that the authorities are to be congratulated on the very elaborate bolts and bars they have affixed to the stable door after the horse was stolen. But I will not discuss in this place the vexed question of quarantine, my object at present being merely to relate what I have seen; and at Doël, it must be confessed, there is very little to see. In spite of the pleasant breeze, the inspiriting journey on the broad river, the amiable hospitality of the members of the Scheldt Sanitary Commission, who had constituted me their guest, it was difficult not to feel a little depressed at the sight of so many fine ships lying idle while their healthy crews are compelled to drink the well water of Doël.

ALLEGED PROPHYLACTIC VALUE OF RHINE WINES.

The *Rheinische Kurier* for Sept. 7th draws attention to the fact that cholera has never occurred in the Rheingau, the heart of the wine district, where some of the most famous vintages occur, and where the "wine of the country" is the common beverage. From this fact, and also the good reputation which these wines enjoy among local medical men in treatment of gastro-intestinal disorders, the inference is drawn that the better classes of white Rhine wine may with advantage be prescribed for cholera patients.

BACTERIOLOGICAL DIAGNOSIS OF CHOLERA.

A demonstration on the bacteriological diagnosis of cholera was lately given before the Berlin Medical Society by Dr. R. Pfeiffer (*Deutsh. Med. Wochensch.*, Sept. 8th), who urged the systematic microscopical examination of the dejecta, which in certain cases is quite sufficient to establish the diagnosis, when the comma bacilli occur in an almost pure culture and form characteristic masses in flakes of mucus. In cases of doubt gelatine plate cultures must be made to decide the question. The methods thereby necessary to absolutely determine diagnosis occupy from twenty-four to thirty-six hours.

INTRA-ARTERIAL INJECTION OF SALINE FLUIDS.

Dr. Oscar Silbermann (*Deutsch. Med. Wochensch.*, Sept. 8th), whilst recognising the value of subcutaneous and intravenous injection of saline fluids in cholera, points out that owing to stagnation of the thickened blood in the venous system it may be far better sometimes to inject the fluid into the arterial system in a manner similar to the form of arterial transfusion introduced by Landois and Ungar. The radial artery is laid bare for a short distance, the peripheral end of the exposed vessel secured by a ligature and the central by forceps. The apparatus consists of a funnel-shaped receiver of 500 to 600 cubic centimetres capacity, terminating in a

T-shaped tube with which is connected a syringe, the vertical limb being attached to the rubber tube, which ends in the nozzle that is subsequently inserted into the artery above the point of ligature. This insertion does not take place until the tube and syringe have been filled with the fluid and all air driven out. The fluid is then pumped into the artery towards the heart by means of the syringe, and the process of filling the syringe and repeating the injection is readily effected without any risk.

INJECTIONS INTO THE URINARY BLADDER.

Dr. Carl Barth (*Deutsch. Med. Wochensch.*, Sept. 8th) suggests that the absorbent surface of the mucous membrane of the bladder should be utilised for the introduction of water into the cholera organism. He thinks the scanty concentrated urine found in the bladder after death in cholera seems to indicate the reabsorption of urinary water under the influence of the increased density of the blood in the vessels. Copious injections of saline fluid into this viscus may therefore fulfil the main indication of the cholerac state.

THE SANITARY CONGRESS.

THE thirteenth annual Congress of the Sanitary Institute opened at Portsmouth on Monday, the 12th inst., with a reception held by the mayor (Alderman T. Scott Foster) at the Town Hall. After the reception luncheon was partaken of in the banqueting hall, the mayor presiding. The usual loyal toasts were given and the mayor then proposed "Success to the Sanitary Congress," offering in a few well-chosen words a cordial welcome to the members. Sir Thomas Crawford and Sir Charles Cameron responded.

THE PRESIDENT'S ADDRESS.

The luncheon concluded, the guests went into the large hall to hear the presidential address. Sir Thomas Crawford having vacated the chair, Sir Charles Cameron, the president of the Congress, delivered the inaugural address on the Victorian Era the Age of Sanitation. He said that the Sovereigns of many countries had been made famous by wars, by political and religious revolutions, and by the works of intellectual giants such as Shakespeare, Bacon and Newton; but the Victorian era was the age of sanitary and social reforms—of diminished sickness, of increased longevity. Never had the British people been so free, so happy, so rich, so powerful, so educated, so moral, so philanthropic, so healthy as during the Victorian era. From the earliest ages, since the people of these islands emerged from barbarism, some attention had been given to the subject of public health, and a few enactments, more or less relating to the health of the people, might be found on the Parliamentary Statute-books and amongst the edicts of the Sovereigns previous to the nineteenth century. Their provisions were, however, rarely enforced, and if all the Sanitary Acts passed before her Majesty's reign were collected they would form a volume of no great size. The Victorian era had produced a wealth of legislation and literature on the subject. The higher estimation of preventive medicine now prevailing among medical men was shown by the recent institution of degrees, diplomas and certificates in public health, State medicine and sanitary science by the universities and medical and surgical corporations. Before the Victorian era there were few sanitary laws worth administering, and consequently no *raison d'être* for local boards or officers of health. Some drainage works had been carried out by the town and country authorities, and a few attempts were made to improve the water-supplies of urban districts. On the other hand, people were taught to be too economical in the combustion of fuel by the imposition of a rate on hearths, and they were encouraged to exclude daylight by having to pay a window tax. The insanitary state of British towns was made painfully evident by the invasion of cholera in 1831. According to official statistics there died from cholera in 1831-2 31,376 persons in England and Wales and 21,171 in Ireland. In 1848 cholera reappeared in England and Wales and destroyed 53,273 lives. In 1853 20,097 deaths were ascribed to cholera, of which about one-half occurred in London. In 1866 it reappeared, but with less fatal results. The deaths in England attributed to it were 14,378, in Ireland 2501, and in Scotland 1470—total, 18,149. This lessened mortality was not due to the milder character of the disease, but rather to the towns being less filthy than they were during previous visitations. On the Continent so virulent and widespread was cholera at this time that it was computed to have caused more than 1,000,000 deaths. A committee appointed to inquire into the sanitary condition of the metropolis reported in 1848 that no substantial improvement had taken place in the state of the back streets, lanes, alleys and courts since the cholera epidemic of 1831-2. The committee expressed an opinion that if the disease was again to visit London it would spread as extensively and prove as fatal as it did in the former visitation. This prediction was unfortunately but too soon verified; but in the meantime the era of sanitary activity was initiated by the passing of the Public Health Act of 1848. Sir Charles Cameron said that although the administration of sanitary laws involved a great outlay of money, it was money well expended. He dwelt upon the necessity of a high standard of efficiency for a medical officer of health, and maintained that that officer would in the future be something more than a physician and a surgeon; he would be, in a sufficient degree, a bacteriologist, a chemist, a veterinarian, a geologist, an engineer, a statistician and, so far as the sanitary statutes were concerned, a lawyer. The Sanitary Institute never did a better thing than issuing their certificate for inspectors of nuisances and for local surveyors. Since 1877 no fewer than 1312 candidates for the sanitary certificate had been examined, of whom 825, or 63 per cent., were successful. During the same period 78 local surveyors received certificates and 113 were unsuccessful. During the Victorian age many millions of money had been spent on sanitary works, and not only did he think the results had been to satisfy the public that there was no waste of public money, but that they were justified in increasing their exertions. Some money might have been injudiciously laid out, but the same might be said of the expenditure for most other public purposes. "Moreover," he said, "it must be admitted that the provisions of many of the Acts relating to health have not been fully carried out, and that many local sanitary authorities, especially in rural districts, have lamentably failed to perform the duties, whether permissive or mandatory, entrusted to them by Parliament. It would not be difficult to discover places where the sanitary statutes are almost or wholly dead letters. They would, indeed, be dead letters in more places than they are were it not for the powerful influence exercised upon public opinion and on the conduct of the authorities by such organisations as the Sanitary Institute, and by the pen and voice of earnest sanitarians. There are hundreds of towns and villages in these islands which are still unprovided with proper arrangements for drainage and filth disposal, and which are dependent upon scanty supplies of water, often of bad or inferior quality. On the whole, however, it must be admitted that the sanitary powers confided to the local authorities have been largely put in force." In comparing the present sanitary state and death-rate of the United Kingdom with the last century and the early part of the present one the President said, the frightful mortality of London and other cities in the last century was due to insanitary conditions. By the earlier part of the nineteenth century the grosser defects had been remedied and the death-rate had been greatly reduced. For about half a century no further improvement took place, but with the passing of the Public Health Acts of 1872 and 1875 an era of active sanitation ensued, with the result that the death-rate fell sensibly in nearly all the towns, and great reductions had been shown in Scotland and Ireland, which were all the more remarkable considering the increasing density of population. Large and dense populations were, as a rule, more unhealthy than small and widely scattered ones. In London the unfavourable influence of the closer approximation of its inhabitants was much more than compensated for by the great improvements effected in the general hygienic conditions of the City. In every other large country in the world the rural population greatly exceeded the urban. In England it was the reverse; 10½ out of its 25 millions lived in the big towns. It was surprising that under such conditions the whole population of England had a greater longevity than the French, German, Russian, Italian and Spanish. Referring to the department of State medicine, he remarked on the importance and utility of vital and moral statistics and advocated a triennial census. The recent reduction of the death-rate was most marked in the case of infective diseases, of which phthisis was the most fatal. We should not be discouraged because of Koch's failure to kill the bacillus of tuberculosis;

in time we should be able to control its ravages and perhaps to extirpate it altogether. In conclusion Sir Charles Cameron said: "The high mortality of the working classes is in no inconsiderable degree due to the insanitary dwellings in which a large proportion of them reside. It is to the improvement of the homes of the artisans and labourers that we must chiefly look for a further reduction in the death-rate of towns. It is not sufficient, therefore, to have our own houses in good order, we are interested, though of course not to the same extent, in having all the houses in our neighbourhood placed under healthful conditions. The education of the people in sanitation ought not to be confined to limited sections of society, but should be carried out as one complete and well-graduated system for the instruction of the whole nation. A study of the laws of health should form part of the system of primary education, and would be at least as interesting to the youthful mind as a study of the 'three R.s.' The character and conduct of the man are mainly dependent upon the education and training of the child; so also in the future nation its action and progress will be the product of the education given to the actual nation in its infancy and youth. Not a few of the evils arise from systematic violations of the laws of life and health. We can hardly be clean in our minds if we are foul in our bodies. Let us keep corruption as far from us as possible; let us dwell in the freshness of things and remember always that filth is synonymous with disease and death; let us worship at the shrine of that goddess who has given a name to the noblest of the sciences—that which relates to the preservation and improvement of that precious porcelain of man's body."

SECTIONAL PROCEEDINGS.

On Tuesday Prof. Kelly read a paper on the Census. He recommended that a count of the population should be taken quinquennially. Dr. J. Groves next read a paper on Isolation Hospitals. Drs. Blackman and Parkes took part in the ensuing discussion, a resolution by the latter gentleman, to the effect "That the Sanitary Institute be recommended to ask the Local Government Board to allow a special expenditure for cholera precautions and hospitals, and that such expenditure should come out of the Imperial and not out of the local rates," being unanimously carried.

Mr. A. E. Harris (Islington) discussed the question, Should Phthisis be compulsorily reported? In the afternoon a paper was read by Dr. Newsholme on Condemnation of Meat of Tuberculous Animals. A resolution recommending that where a portion of an animal was affected with disease the whole carcase should be condemned was unanimously carried. The Purification of River Water by means of Iron was the next subject discussed, Mr. H. Swete read a paper and presided over the meeting. Mr. G. H. D'eath read a concluding paper on the subject of Village Sanitation.

At the Conference of Sanitary Inspectors Professor A. Wynter Blyth, the President, remarked that the Sanitary Institute had at length attained its proper position and was confessedly the chief society in the kingdom, having for its main object the furtherance of all knowledge relating to the prevention of disease.

"Difficulties in the Prevention of Infectious Diseases" was the title of a paper read by Mr. S. C. G. Fairchild of Clapham, who said that the section of the Infectious Disease Notification Act dealing with the notification of infectious disease by the head of the family was seldom carried out in many districts, and thereby loss of time took place before any steps could be taken by the sanitary authority.

Mr. W. J. Addiscott moved: "That this meeting is of opinion that the removal to an isolation hospital of all persons, irrespective of social status, who are not, in the opinion of the sanitary officers, effectually isolated should be made compulsory." Mr. Fairchild seconded the resolution, which was supported by the President. The resolution was passed unanimously.

Mr. W. H. Wells (Newcastle-on-Tyne) read a paper entitled "The Sanitary Institute and its relation to Sanitary Inspectors," and moved a resolution which had for its object an alteration in the existing examinations of the Institute. The resolution was then put to the meeting, but the majority voted against it, the general opinion being that it was neither wise nor necessary to interfere with the operations of the Institute, whose examinations, according to several speakers, became more stringent year after year.

THE LADIES' CONFERENCE.

A Ladies' Conference was held in the grand jury room at the Town Hall. Sir Charles Cameron welcomed the ladies as coadjutors in the work of the Institute, and then, apologising briefly for the unavoidable absence of the President (Lady Douglas Galton), introduced Mrs. Ernest Day as President of the Conference. Dr. J. P. Williams-Freeman delivered an address on the Chief Hygienic Causes of Mortality amongst Infants and Young Children.

MILITARY HYGIENE.

In the Aula Magna of the Roman Catholic Cathedral, Edinburgh-road, Landport, a conference of naval and military hygienists was held, under the presidency of Inspector-General John D. Macdonald, who, in an introductory address, dealt at some length with the question of typhoid fever and other bacteria, illustrating his subject by means of a number of interesting diagrams. Surgeon-Captain R. H. Firth, A.M.S., Assistant Professor of Military Hygiene at Netley, then read a paper on some Sources of Danger to the Public Health in Indian Methods of Conservancy, especially with reference to the Prevalence of Zymotic Disease in that Country. Following this came a paper on the Prevalence of Common Diseases at Home and Abroad, by Dr. Richard Domenichetti, Deputy Inspector-General and Medical Officer of Health Louth Combined Districts.

VISIT TO EASTNEY.

At the conclusion of the conferences a number of waggonettes were in readiness at the Town Hall, and nearly 200 members visited the pumping station and subterranean sewage tanks at Eastney. The sewage undergoes no treatment whatever. It is raised from the sewers into three large tanks capable of holding about 6,000,000 gallons, and from these it is discharged twice a day into the sea at Eastney. One of the reservoirs was effectively illuminated with coloured lamps. The party then proceeded to the borough asylum, where the Committee of Visitors, of which Sir W. King is president, entertained them in the large recreation-room with music and a "high tea." In proposing the health of Sir W. King Sir C. Cameron thanked him and the members of the Visiting Committee for the hospitality which had been shown to the members of the Congress. As the weather was most propitious and the arrangements perfect the excursion proved a most enjoyable one.

ENGLISH HOMES.

In the evening Sir Thomas Crawford, K.C.B. &c., gave a lecture at the Town Hall on English Homes. Dealing with the necessities for a healthy home he said the first requisite was a free supply of fresh air. Sunlight, too, and pure water were prime necessities of life. As a remedy for impure water he recommended that in poor localities the water-supply should be the landlord's responsibility, and his power to recover rent should be conditional on the efficiency and sufficiency of the supply of water. Sir Thomas Crawford next dealt at length with the question of air space and ventilation, and, referring to the danger to health caused by the combustion of gas, said that, fortunately for those who could afford it, there was a near prospect of relief in the electric light. He recommended a limited use of curtains and carpets, which were often the happy hunting ground of the hostile microbe. Of furniture in general it might be said that the safest limit was the utilitarian one, and in bedrooms the more Spartan the taste the better. Alluding to rural homes he showed the economic as well as sanitary advantage of having the allotments surrounding the cottages, but said that the change would not come until the landed proprietors saw the folly of letting land only under conditions which made agricultural pursuits unremunerative. "General" Booth's scheme had the advantage of attempting to place the unemployed on the soil under conditions which promised the industrious cultivator health, food and clothing, with a reasonable prospect of a useful life. But why not begin at the other end of the problem and deal with the agricultural labourer before he left the land to become a town loafer suitable only for Salvation Army purposes? In conclusion, Sir Thomas Crawford said: "The housing of the working classes is in a fair way of being satisfactorily provided for, but nothing has yet been done to provide suitable accommodation for the poorest class of the people not actually paupers."

CHOLERA, TUBERCULOSIS, SMALL-POX.

On Wednesday Sir C. Cameron opened the section of Sanitary Science and Preventive Medicine by introducing the President, Professor L. Notter, M.D., who, he said, was a fellow countryman of his, a graduate of Dublin and one of the first who took the public health diploma at that

University. After the reading of the address Sir C. Cameron proposed a vote of thanks to the President, who said he had admirably summarised our knowledge "up to date." Sir T. Crawford seconded, and it was carried with acclamation.

Mr. F. Oldfield followed with a paper on Tuberculosis; or, Does Consumption arise from Flesh Eating? Sir C. Cameron said the paper was really a lecture on Vegetarianism, and pointed out that animals such as cows, which were strictly vegetarians, suffered most severely from tuberculous diseases. He also added that we might as logically cease to drink water because it occasionally induces cholera or typhoid fever. The Irish poor, who eat very little meat, suffer greatly from phthisis, whilst the rich, who consume animal food largely, do not suffer nearly to the same extent. He advocated the abolition of private slaughter-houses and more efficient supervision of public ones. Mr. Washington Lyon described what is done in the London abattoirs. Dr. Armand Ruffer said, as the result of post-mortem examinations of over 1000 cases in adults in not five cases had he been able to say that the disease was due to the ingestion of the bacilli into the alimentary tract. In children the contrary is the case, and yet they eat little or no meat, but, on the other hand, they are large consumers of milk. The danger from eating meat is very slight, but the danger to children drinking milk of tuberculous animals is very great. The poisonous products of the bacilli when taken into the stomach are practically inert. Even tuberculous meat when properly cooked is free from danger. Where one person dies from ingestion of meat a hundred are directly infected from their relatives or friends. Sir T. Crawford concurred entirely with Dr. Ruffer's observations and emphasised the great importance of an abundance of fresh air as shown by the army returns. Dr. Sykes and Dr. Thresh having also spoken, Mr. Oldfield replied, insisting upon "flesh food" being a more important cause of tuberculosis than was usually supposed, and that as it was often impossible to detect bacilli in flesh, it was best to desist from eating all flesh. The views of the writer did not appear to meet with the support of any medical member of the Congress present. The Chairman suggested, and Mr. Oldfield proposed, that "in the opinion of this meeting the total abolition of private slaughter-houses in towns is an urgent necessity." This was duly seconded and carried *nem. con.*

Captain F. Smith then read his paper on How long does Vaccination confer Immunity from Small-pox? Dr. Sykes thought the public might infer from the paper that because a person could be reinoculated in a few months after vaccination, he therefore was again susceptible and that vaccination affords only a very brief protection. This is a fallacy, as proved by the statistics of every epidemic which had been carefully investigated. Small-pox is not naturally acquired by inoculation, therefore it did not follow that because a person could be revaccinated at such an early period he was susceptible to the disease from ordinary exposure to infection.

Mr. Washington Lyon moved that "The execution of the Vaccination Acts be transferred from the Board of Guardians to the sanitary authorities." This was carried unanimously.

MORTALITY OF CHILDREN IN DUBLIN.

Sir C. Cameron, after luncheon, read his paper on the Mortality of Children in Dublin. Dr. Sykes said the adult mortality in Dublin being high, the infantile mortality by comparison was low, but if calculated upon the basis of age-population probably the result would be different. Mr. Kemble pointed out the effect of social position—the lower the social status of the population the higher the infantile mortality, and *vice versâ*. Sir T. Crawford regarded the improper feeding of children as one of the greatest, if not the greatest cause of the excessive mortality amongst children, and referred to the habit of Irish mothers sleeping with children in their arms as an objectionable one. Mr. Trevor Fowler (Epping) dwelt upon the difficulty of obtaining milk in many rural districts, especially in the neighbourhood of large cities. In replying, Sir C. Cameron said he had given statistics on various bases and contended that he had proved that in Dublin children under one year of age had a better chance of life than in any other large town with which he was acquainted. There being few factories in that city a much larger proportion of Irish mothers nursed their own children.

DISPOSAL OF THE DEAD.

In the absence of the Rev. F. Laurence the secretary read his paper on the Disposal of the Dead, advocating the system of earth-to-earth burial. Sir C. Cameron did not regard the burying of bodies in the earth as likely to be a cause of nuisance or injurious to health, whether in well-conducted cemeteries near towns or in village churchyards. He had never detected any vitiation of the air in burial grounds, and he had found very little organic matter in the water drained from cemeteries. Dr. W. Cousins contended that since many diseases were due to specific microbes, and since these could possibly multiply in the earth and ultimately become disseminated, earth-to-earth burial was not so safe as other methods of disposing of the human body which have been suggested. Dr. Axford dwelt on the difficulty and cost of obtaining suitable land for cemeteries as at Portsmouth. Such land would be unnecessary were cremation adopted, and could be used for other and better purposes. He advocated the greater care in the filling in of death certificates. Cremation he regarded as a more natural sanitary method of disposing of the dead. Sir T. Crawford said in Benares cremation did not decrease the risk from cholera. The Moslems bury one body in one grave, and he had never known disease to be spread through the graveyards. He did not think there was any danger of buried infected bodies disseminating disease. Dr. Notter drew attention to the fact of there being earth which could not be considered "living earth," and that too dry, sandy soils were unsuitable for human burial since they were almost destitute of micro-organisms.

Dr. Warner being absent, Dr. Sykes read his paper on the Physical Condition of Children.

VISIT TO WATERWORKS.

Many of the members during the afternoon visited Porchester Castle; others at the conclusion of the meeting took train for Havant, where carriages were in waiting to drive them to the Portsmouth Water Company's works. At Havant, and at Bedhampton close by, a number of springs in the chalk supply the whole of the borough and the dockyard. The group of springs at Havant rise into shallow reservoirs covering some three or four acres. At Bedhampton there are also several springs, one of which, the "blue hole"—so called on account of the beautiful tint of the water—yields from two to three million gallons of water per diem. The pumps at the two stations raise on an average five and a half million gallons of water daily into a reservoir of from 7,000,000 to 8,000,000 gallons capacity, situated on Portsdown Hill, some three miles nearer the town, from which it flows by gravitation to supply a population of about 160,000. This gives 34 gallons per head per diem. Portsmouth is a watercloseted town, the number of closets being 44,000. From Portsdown the water passes through four mains of 10 in., 12 in., 20 in. and 24 in. diameter respectively to supply the town. There is also an extra 12 in. main which supplies the dockyard only. All the above mains are laid in duplicate. The supply is constant. The estimated cost of the works is £400,000 and the company pays the maximum dividend of 10 per cent. The Corporation have contemplated the purchase of the works, for which the company ask £1,100,000. Colonel Owen, the vice-chairman of the company, and Mr. R. W. Ford, the secretary, conducted the visitors over the works and gave the fullest possible information. Refreshments had also been thoughtfully provided at the Bedhampton works. The members thanked Colonel Owen and Mr. Ford for their kindness and returned to Portsmouth in time for the Mayor's reception and conversazione.

HOUSE SANITATION IN HEALTH RESORTS.

BY A. P. SHERWOOD, M.D., L.R.C.P.
(EASTBOURNE.)

WITH the exception of a pure water-supply there is no condition of more importance to the health of a community than the state of its house sanitation; and in towns where speculative building is the rule rather than the exception it becomes a very anxious and difficult task for the sanitary authority to secure such a state of perfection as modern science has proved to be necessary. Even the provisions of the Public Health Act or of Local Improvement Acts are very difficult to enforce without arousing a great deal of bitter personal animosity, and the natural reluctance of town councillors to put

the law in force against a fellow townsman—not infrequently a member of the corporation—leads them to put off the unpleasant duty until faulty materials and workmanship have become largely used, and the officials, disheartened by the disregard of their reports, cease to make them, and interested parties carry on their work unchecked. But in health resorts, where the competition between lodging-house keepers and persons who sublet their furnished houses is so keen, there is always a desire to show a good sanitary condition, and this, if taken advantage of by the sanitary committee, can be used as a powerful lever and a vast amount of sanitary work accomplished without exciting any personal animosity and without putting the provisions of the law in force. In this way not only can the old bad work be replaced by good, but builders know that their work will be tested and so a good condition of all new houses is secured.

By establishing a voluntary register of sanitary houses the Corporation of Eastbourne has made an attempt to take advantage of this competition between the lodging-houses, and the scheme has met with such a measure of success as to prove that there is a desire on the part of willing owners to have their property made sanitarily sound, whilst the unwilling follow their example in their own interest. The system as carried out at Eastbourne is entirely voluntary, and no house can be registered, and no certificate is given, till every requirement is strictly complied with. This presses sometimes very hardly upon the owners of old houses, but if any departure were allowed from the standard fixed upon the certificates would inevitably lose their value, and it has been found that ingenuity can overcome obstacles at first almost insuperable when the owner sincerely desires to improve his property.

The register contains a full description of the sanitary appliances in each house, the position and fall of the drain, a description of the watercloset, sinks, dustbins and water-supply, with the names of the builder, owner and occupier. It forms a useful book of reference both for officials and owners. The register is not signed till everything is perfect, and until it is thus signed by the examining inspector no certificate is given. The certificate is not a vague one, leaving room for opinion as to what is or is not sanitary, but sets forth certain requirements which the examining inspector has to certify are duly complied with. This saves the inspectors from much badgering, gives them a definite responsibility and renders their work more easily supervised. Moreover, the corporation is protected against extravagant expectations, as anyone reading the certificate can see how far it goes. The certificate as at present issued does not give quite all the requirements which are insisted upon, but a new issue will have them set forth. It runs as follows :

I HEREBY CERTIFY that on the .... day of .... 189 , the above-named premises were duly and properly examined and inspected and the drains tested, when it was found that the undermentioned requirements were duly complied with.

Dated this .... day of .... 189 .

REQUIREMENTS.

1. There must be an efficient intercepting trap between the house drains and the sewer.
2. All the drains must answer any test applied by the examining inspector.
3. All openings in the drains must be outside the house and properly trapped.
4. All waterclosets must be of good pattern, with separate water-supply, sufficient flush and the soil pipe efficiently ventilated.
5. A separate water-supply for drinking purposes.
6. A properly covered or removable dustbin.

.....

Chief Inspector of Nuisances.

N.B.—This certificate will be withdrawn if, at any time, the sanitary arrangements are found in a faulty condition or badly kept, or any alterations are made without the approval of the inspector of nuisances.

The further requirements are : under (1) an easily accessible means of inspection ; under (2) efficient ventilation of the drain by inlet and separate up-shaft if the soil pipe is not at its highest point ; under (3) all "wastes" must be trapped as well as disconnected ; under (4) soil-pipe carried up full-bore well above the eaves and away from windows. "Pan" and "long hopper" waterclosets and bell traps are not passed and the drains must stand the water test below the ground and the smoke above. The inspection is made, advice given and the tests applied free of cost to the applicant for a certificate, but all work is done at his expense by workmen employed by him, and it must be done to the satisfaction of the buildings' surveyor, medical officer of health, and the inspector who signs the register.

The system is new as yet and will no doubt be modified and improved as time goes on ; but it has passed through a storm of opposition, stirred up by the interested and fomented by the timid, and now the demand for certificates is so steady that its usefulness will soon be unquestioned. The first certificate was issued in the spring of 1890, and by the end of that year only fifty-six had been granted ; the number, however, has now reached 225, and there have been for some time about eight new houses certified every month. The number at present issued forms about 15 per cent. of the whole number of houses concerned—viz., lodging-houses, schools, hotels and private houses of a rental above £50 per annum. Although the great bulk of the cottage property and most of the private residences could easily obtain certificates it is found that the owners do not apply for them. As to the future, the council cannot now withdraw from the good work it has commenced. Visitors are beginning to require certificates before taking houses, and a house agent bitterly complains that the sanitary committee is "ruining the town" in consequence. It is easy to prophesy therefore that the ruin will be averted and owners find the value of their property increased, whilst the reputation of Eastbourne as a safe health resort and place of residence cannot fail to be enhanced.

CONGRESS OF OBSTETRICS AND GYNÆCOLOGY AT BRUSSELS.

(FROM A CORRESPONDENT.)

IN spite of adverse circumstances, I presented myself at Dr. Jacobs' clinique, where Dr. Segoud of Paris was to operate at 8 o'clock. Dr. Jacobs' hospital is situate quite on the confines of the city, almost in the country. There were about sixty present at the operation, of whom only about a dozen were able to see anything. The room was not very light ; perhaps the crowd obscured it. The case operated upon was one where a pyo-salpinx or ovarian abscess was diagnosed behind the uterus. Dr. Segoud, in his observations before the operation, insisted that a vaginal operation was better than abdominal section, safer and more easily carried out. The operation was the removal of the uterus per vaginam *morcellement* in order to cure inflammations of the appendages. He cut round the mucous membrane front and back, pulled down the uterus and snipped off pieces as he went on, stripping off the peritoneum until he finally shelled out the whole uterus ; he then opened the abscess behind the uterus, evacuated the pus and washed out the cavity. Fourteen pairs of forceps were left on the various bleeding points, with their handles variously gilt, so as to be the more easily recognised. Two sponges dipped in iodoform were placed one in front and the other behind the bundle of forceps to sustain the vaginal and peritoneal wall and to prevent subsidence of the intestines. To many of us the operation seemed a roundabout way of doing what English operators prefer doing by abdominal section. We prefer the short and direct way of getting at the diseased ovaries and tubes and the resulting abscesses, and have as yet had no experience of removing the uterus in order to cut off the source of infection. I have just heard that in this particular case the disease was set up by gonorrhœa, and so, the uterus being itself also diseased, there was perhaps some *primâ facie* reason for this method of procedure. There will, however, be a discussion on the subject during the Congress.

At 2 P.M., or rather 2.30, Dr. Kuffrath, the President, opened the session in the absence of the King. The King, however, intends to be present at the meeting to-morrow (Thursday) afternoon, and afterwards, at 3.30, is going to receive all the members of the Congress at the Palace. All the delegates were in full—i.e., evening—dress.

After the President had sat down he called on Dr. C. Jacobs, the general secretary, to speak. He gave a short account of the initiation of the movement by the Société Belge de Gynécologie et d'Obstetrique, and gave a list of the cognate societies that had sent delegates to the Congress, heading the list of thirteen with the British Gynæcological Society. He also referred to the gracious act of the King, who had accepted the position of patron, to M. de Bruyn, Minister of Public Works, Industry and Agriculture, and to the Minister of Railways, who had carried all exhibits for half price (a hint for our own railway companies under similar circum-

stances). Then ensued a list of speeches by the various delegates, beginning with Spencer Wells, representing England; then Engelmann, from the States; Gusserow, Berlin; Péan, Paris; Engstrom, Finland; Consolas, Athens; Porro, Milan; Schonberg, Christiania; Rein of Kiev, Russia; Vuillet of Geneva, Switzerland; a representative from Turkey; More Madden (who spoke in French), Ireland; and Murdock Cameron of Glasgow, Scotland.

The President then declared the session opened and read a short paper on Puerperal Fever, showing that since the introduction of antiseptics into the Maternity Hospital the mortality had most remarkably decreased. The report of the rest of this Congress, which promises to prove an interesting one, I must defer till next week.

Sept. 14th.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6398 births and 3688 deaths were registered during the week ending Sept. 10th. The annual rate of mortality in these towns, which had increased in the preceding three weeks from 18·0 to 19·8 per 1000, declined last week to 18·9. In London the rate did not exceed 16·6 per 1000, while in the thirty-two provincial towns it averaged 20·5 per 1000. The lowest rates in these towns were 10·2 in Norwich, 11·3 in Croydon, 13·9 in Birkenhead and 14·3 in Nottingham; the highest rates were 24·7 in Blackburn, 26·5 in Leeds and in Salford, 28·8 in Burnley and 31·6 in Preston. The 3688 deaths included 899 which were referred to the principal zymotic diseases, against numbers increasing from 678 to 984 in the preceding three weeks; of these, 652 resulted from diarrhœa, 62 from scarlet fever, 59 from diphtheria, 54 from measles, 39 from whooping-cough, 30 from "fever" (principally enteric) and 3 from small-pox. The lowest death-rates from these diseases were recorded in Norwich, Plymouth, Birkenhead and Huddersfield, and the highest rates in Blackburn, Gateshead, Sheffield, Leeds and Preston. Measles caused the highest proportional fatality in Huddersfield, Brighton and Oldham; scarlet fever in Leeds and Swansea; whooping-cough in Derby and Preston; "fever" in Blackburn; and diarrhœa in Leicester, Salford, Hull, Bolton, Sheffield, Gateshead, Leeds and Preston. The 59 deaths from diphtheria included 37 in London, 4 in Liverpool, 4 in Birmingham and 3 in Leeds. Three fatal cases of small-pox were recorded in Halifax, but not one in London or in any other of the thirty-three large towns. Four cases of this disease were under treatment in the Metropolitan Asylum Hospitals and 3 in the Highgate Small-pox Hospital on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 3339, against 3052, 3103 and 3280 on the preceding three Saturdays; 414 new cases were admitted during the week, against 367 and 461 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 143 and 114 in the preceding two weeks, rose to 125 last week, but were 40 below the corrected average. The causes of 64, or 1·7 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Brighton, Cardiff, Nottingham, Salford, Sunderland and in ten other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Leicester, Blackburn and Huddersfield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the preceding three weeks from 17·2 to 15·7 per 1000, rose again to 16·6 during the week ending Sept. 10th, but was 2·3 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 9·4 in Aberdeen and 16·1 in Edinburgh and in Paisley to 18·9 in Perth and 22·3 in Greenock. The 461 deaths in these towns included 24 which were referred to diarrhœa, 10 to scarlet fever, 9 to whooping-cough, 6 to measles, 6 to diphtheria, 6 to "fever," and not one to small-pox. In all, 61 deaths resulted from these principal zymotic diseases, against numbers declining from 81 to 67 in the preceding three weeks. These 61 deaths were equal to an annual rate of 2·2 per 1000, which was 2·4 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had been 34 and 26 in the preceding two weeks, further declined to 24 last week, of which 12 occurred in Glasgow and 4 in Edinburgh. The deaths referred to scarlet fever, which had been 10 and 14 in the preceding two weeks, declined again to 10 last week, all of which were recorded in Glasgow. The 9 fatal cases of whooping-cough were within 1 of the number in the previous week and included 7 in Glasgow. The deaths from diphtheria, which had been 4 in each of the preceding two weeks, increased to 6 last week, of which 3 occurred in Glasgow and 2 in Aberdeen. The 6 fatal cases of measles showed a further decline from those recorded in recent weeks, and included 4 in Edinburgh. Of the 6 deaths referred to the different forms of "fever," 3 occurred in Dundee and 2 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 57 in each of the preceding two weeks, were 59 last week, and within 3 of the number in the corresponding week of last year. The causes of 50, or nearly 11 per cent., of the deaths in the city last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased from 19·5 to 26·3 per 1000 in the preceding three weeks, further rose to 28·3 during the week ending Sept. 10th. During the first ten weeks of the current quarter the death-rate in the city averaged 23·5 per 1000 against 17·5 in London and 16·1 in Edinburgh. The 190 deaths in Dublin during the week under notice showed an increase of 14 upon the number in the preceding week, and included 28 which were referred to diarrhœa, 4 to "fever," 3 to measles, 1 to whooping-cough, and not one either to small-pox, scarlet fever or diphtheria. In all, 36 deaths resulted from these principal zymotic diseases, equal to an annual rate of 5·4 per 1000, the zymotic death-rate during the same period being 3·2 in London and 2·0 in Edinburgh. The fatal cases of diarrhœa, which had been 9 and 19 in the preceding two weeks, further rose to 28 last week. The deaths referred to different forms of "fever," which had been 2 in each of the preceding three weeks, increased to 4 last week. The fatal cases of measles, which had steadily declined in the previous six weeks from 8 to 1, rose again to 3 last week. The 190 deaths registered in Dublin last week included 75 of infants under one year of age and 29 of persons aged upwards of sixty years; the deaths of infants showed a considerable further increase upon those recorded in recent weeks, while those of elderly persons showed a slight decline. Seven inquest cases and 4 deaths from violence were registered; and 46, or nearly a fourth, of the deaths occurred in public institutions. The causes of 35, or more than 18 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING AUGUST, 1892.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality during the month of August in each of the forty-one sanitary districts of London. With regard to the notified cases of infectious disease in London during last month, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the accompanying table was equal to 12·5 per 1000 of the population, estimated at 4,263,294 persons in the middle of this year. Owing to the increasing prevalence of scarlet fever in the metropolis this rate shows a slight further increase upon those recorded in the preceding six months, which had steadily risen from 5·1 to 12·2 per 1000. Among the various sanitary districts the rates last month were considerably below the average in Paddington, Kensington, St Giles, Strand, St. Olave Southwark, Wandsworth and Lewisham; while they showed the largest excess in Holborn, Newington, Bermondsey, Plumstead and in all the districts of East London. The prevalence of small-pox in London showed a further decline during August, an average of 4 cases weekly being notified, against 27 in May, 16 in June, and 5 in July; of the 19 cases notified last month 3 belonged to St. Pancras, 3 to Mile-end Old Town, and 3 to Battersea sanitary districts. The Metropolitan Asylum Hospitals and the Highgate Small-pox Hospital contained 8 small-pox patients at the end of August, against 108, 40 and 9 at the end of the preceding three months; the weekly

MONTHLY ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON.—AUGUST, 1892.

(Specially compiled for THE LANCET.)

Sanitary areas.	Estimated population in the middle of 1892.	Notified Cases of Infectious Disease.												Deaths from Principal Infectious Diseases.												Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Membranous croup.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.				
LONDON	4,263,294	19	3208	803	2	263	20	41	657	40	16	5099	12·5	—	219	152	184	65	1	30	2	722	1375	3·4	6892	16·9	177
West Districts.																												
Paddington	119,199	—	63	9	—	5	—	2	8	—	—	87	7·6	—	3	1	2	—	—	1	—	26	33	2·9	154	13·5	188
Kensington	166,721	—	77	14	—	7	1	2	19	1	—	121	7·6	—	17	5	—	1	—	—	1	25	49	3·1	237	14·8	197
Hammersmith	100,642	—	53	34	—	4	2	1	6	1	—	101	10·5	—	6	4	5	3	—	1	1	23	43	4·5	164	17·0	232
Fulham	98,195	—	67	13	—	4	—	2	10	2	—	98	10·4	—	2	2	4	3	—	—	—	26	37	3·9	161	17·1	180
Chelsea	97,300	—	75	16	—	4	1	—	18	3	1	118	12·6	—	—	4	4	1	—	1	—	13	23	2·5	135	14·5	157
St. George Hanover-square	76,946	—	39	10	—	2	—	—	7	—	—	58	7·9	—	1	3	2	—	—	—	—	4	10	1·4	92	12·5	92
Westminster	55,203	—	31	25	—	3	—	—	11	—	—	70	13·2	—	—	3	6	2	—	—	—	3	14	2·6	93	17·6	105
St. James Westminster	24,368	—	9	3	—	—	—	—	1	—	1	14	8·0	—	—	—	—	—	—	—	—	2	2	0·9	30	12·8	94
North Districts.																												
Marylebone	140,799	—	83	17	—	8	1	—	22	1	—	132	9·8	—	1	7	3	1	—	1	—	15	28	2·1	215	15·9	148
Hampstead	71,652	—	52	9	—	2	—	3	6	—	—	72	10·5	—	3	—	1	—	—	—	—	2	6	0·9	60	8·7	127
St. Pancras	234,207	3	164	34	—	10	—	1	55	2	4	273	12·2	—	7	10	8	2	—	3	—	33	63	2·8	400	17·8	198
Islington	324,451	—	217	68	—	28	1	5	37	3	2	361	11·6	—	12	7	20	1	—	3	—	64	107	3·4	479	15·4	193
Hackney	235,370	—	158	50	—	30	—	2	22	2	—	264	11·7	—	14	3	10	4	—	2	—	33	66	2·9	300	13·3	143
Central Districts.																												
St. Giles	39,071	1	10	6	—	1	—	—	8	—	—	26	6·9	—	1	—	2	—	—	—	—	3	6	1·6	55	14·7	186
St. Martin-in-the-Fields	14,204	—	6	3	—	—	1	—	3	—	—	13	9·5	—	—	2	—	—	—	—	—	—	2	1·5	30	24·0	97
Strand	24,256	—	11	2	—	1	—	—	2	—	—	16	6·9	—	1	1	—	—	—	—	—	3	5	2·1	46	19·8	200
Holborn	32,912	—	58	7	—	4	—	1	11	—	—	81	25·7	—	1	2	3	1	—	—	—	3	10	3·2	78	24·7	181
Clerkenwell	65,482	—	44	10	—	3	1	—	11	3	—	72	11·5	—	4	4	3	3	—	—	—	10	24	3·8	119	19·0	213
St. Luke	41,850	—	21	6	1	—	—	—	12	—	—	40	10·0	—	2	1	2	2	—	—	—	6	13	3·2	90	22·4	151
City of London	36,092	—	29	2	—	3	—	1	4	—	—	39	11·1	—	1	1	1	1	—	—	—	2	6	1·7	72	20·5	109
East Districts.																												
Shoreditch	123,683	—	108	27	—	9	1	—	41	2	—	188	15·9	—	5	6	6	1	—	—	—	29	47	4·0	232	19·6	184
Bethnal Green	129,408	—	113	53	—	6	—	—	36	2	—	210	16·9	—	8	7	12	1	—	1	—	22	51	4·1	247	18·3	164
Whitechapel	74,853	2	97	24	—	8	—	1	23	—	—	155	21·6	—	7	7	9	—	—	—	—	8	31	4·3	171	23·8	183
St. George-in-the-East	45,343	—	52	16	—	—	1	—	11	—	—	80	18·4	—	2	3	2	—	—	—	—	12	19	4·4	97	22·3	139
Limehouse	57,489	—	80	11	—	4	—	1	8	—	—	104	18·9	—	7	6	4	2	—	1	—	10	30	5·4	119	21·6	181
Mile End Old Town	107,811	3	169	29	—	8	—	1	25	1	1	237	22·9	—	6	5	7	—	—	4	—	13	35	3·4	178	17·2	139
Poplar	167,857	1	204	53	—	31	1	3	37	3	2	335	20·8	—	9	7	5	2	—	2	—	40	65	4·0	318	19·8	199
South Districts.																												
St. Saviour Southwark	26,973	—	23	6	—	—	—	—	3	—	—	32	12·4	—	1	4	—	—	—	—	—	5	10	3·9	54	20·9	219
St. George Southwark	59,846	—	48	9	—	3	—	3	10	—	—	73	12·7	—	6	3	4	2	—	2	—	8	23	4·0	119	20·7	218
Newington	116,649	—	121	24	—	9	—	2	26	3	—	185	16·5	—	6	6	3	4	—	—	—	16	37	3·3	177	15·8	153
St. Olave Southwark	12,787	—	5	—	—	1	—	—	1	—	—	7	5·7	—	2	—	—	—	—	—	—	4	6	4·9	42	34·3	410
Bermondsey	84,440	—	76	13	—	4	—	1	28	—	1	123	15·2	—	4	1	3	3	—	—	—	13	24	3·0	161	19·9	159
Rotherhithe	39,459	—	29	2	1	3	—	—	9	—	—	44	11·6	—	8	—	1	1	1	—	—	12	23	6·1	85	22·5	288
Lambeth	277,917	2	188	65	—	14	2	—	35	3	4	313	11·7	—	15	9	19	4	—	2	—	41	90	3·4	434	16·3	151
Battersea	156,313	3	116	45	—	9	1	3	29	1	—	207	13·7	—	4	6	10	6	—	1	—	26	53	3·5	252	16·8	193
Wandsworth	164,003	—	59	16	—	3	6	1	20	1	—	106	6·7	—	4	3	5	5	—	—	—	34	51	3·2	243	15·5	246
Camberwell	241,465	2	160	27	—	8	—	1	29	4	—	231	10·0	—	26	9	8	2	—	2	—	55	102	4·4	409	17·7	198
Greenwich	169,734	1	135	18	—	12	—	2	21	1	—	190	11·7	—	16	5	6	5	—	2	—	45	79	4·9	299	18·4	204
Lewisham (excluding Penge)	74,673	—	19	9	—	4	—	—	8	—	—	40	5·6	—	1	—	—	—	—	—	—	12	13	1·8	82	11·5	123
Woolwich	41,376	—	32	2	—	1	—	1	8	—	—	44	11·2	—	4	—	—	—	—	—	—	10	14	3·5	65	16·4	141
Plumstead	91,704	1	107	16	—	3	—	1	6	1	—	135	15·4	—	2	5	4	2	—	1	—	11	25	2·8	118	13·4	176
Port of London	—	—	—	—	—	4	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

admissions averaged 2, against 29, 11 and 5 during May, June and July respectively. The prevalence of scarlet fever during August showed a further slight increase upon that recorded in recent months. This disease was proportionally most prevalent in Holborn, Whitechapel, St. George-in-the-East, Limehouse, Mile End Old Town, Poplar, Newington, Bermondsey and Plumstead sanitary districts. The Metropolitan Asylum Hospitals contained 3213 scarlet fever patients at the end of August, against numbers increasing from 1142 to 2763 at the end of the preceding six months; the weekly admissions averaged 378, against 170, 200, 238 and 335 in the preceding four months. Diphtheria showed the highest proportional prevalence during August in Hammersmith, Westminster, Bethnal Green, Whitechapel, St. George-in-the-East, Poplar and Battersea sanitary districts. There were 310 cases of diphtheria under treatment in the Metropolitan Asylum Hospitals at the end of August, against numbers increasing from 198 to 283 at the end of the preceding five months; the weekly admissions averaged 55, against 41, 49 and 56 in the previous three months. Among the various sanitary districts enteric fever was proportionally most prevalent in Hackney, Holborn, Whitechapel, Poplar and Greenwich. The Metropolitan Asylum Hospitals contained 93 enteric fever patients at the end of August, against 47, 57 and 77 at the end of the preceding three months; the weekly admissions averaged 14, against 8, 10 and 16 in the preceding three months. Erysipelas showed the highest proportional prevalence during the month under notice in St. Pancras, Holborn, St. Luke, Shoreditch, Whitechapel and Bermondsey.

The mortality statistics in the accompanying table relate to the deaths of persons actually belonging to the various metropolitan sanitary districts, the deaths occurring in the institutions of London having been distributed among the various sanitary districts in which the patients had previously resided. The distribution of these deaths, and especially of those resulting from zymotic diseases, affords the most trustworthy data that can be secured upon which to calculate reliable rates of mortality. During the five weeks ending Saturday, Sept. 3rd, the deaths of 6892 persons belonging to London were registered, equal to an annual rate of 16·9 per 1000, against 16·9 and 17·8 in the preceding two months. The lowest death-rates during August in the various sanitary districts were 8·7 in Hampstead, 11·5 in Lewisham (excluding Penge), 12·5 in St. George Hanover-square, 12·8 in St. James, Westminster, 13·3 in Hackney, 13·4 in Plumstead and 13·5 in Paddington; in the other sanitary districts the rates ranged upwards to 22·0 in St. Martin-in-the-Fields, 22·3 in St. George-in-the-East, 22·4 in St. Luke, 22·5 in Rotherhithe, 23·8 in Whitechapel, 24·7 in Holborn and 34·3 in St. Olave, Southwark. During the five weeks of August 1375 deaths were referred to the principal zymotic diseases in London; of these, 722 resulted from diarrhœa, 219 from measles, 184 from diphtheria, 152 from scarlet fever, 33 from "fever" (including 30 from enteric fever, 1 from typhus fever, and 2 from ill-defined fever) and not one from small-pox. These 1375 deaths were equal to an annual rate of 3·4 per 1000, against 3·1 and 3·9 in the preceding two months. Among the various sanitary districts the lowest zymotic death-rates were recorded in St. George Hanover-square, St. James Westminster, Hampstead, St. Giles, St. Martin-in-the-Fields and City of London; and the highest rates in Hammersmith, St. George-in-the-East, Limehouse, St. Olave Southwark, Rotherhithe, Camberwell and Greenwich. The 219 deaths referred to measles exceeded by 14 the corrected average number in the corresponding month of the preceding ten years; among the various sanitary districts this disease showed the highest proportionate fatality in Kensington, Whitechapel, Limehouse, St. George Southwark, Rotherhithe, Camberwell and Woolwich. The 152 fatal cases of scarlet fever were 34 above the average; among the various sanitary districts this disease was proportionately most fatal in St. Martin-in-the-Fields, Whitechapel, Limehouse; and St. Saviour Southwark The 184 deaths referred to diphtheria exceeded by as many as 79 the corrected average; this disease showed the highest proportional fatality in Westminster, Holborn, Bethnal Green, Whitechapel and Battersea. The 65 fatal cases of whooping-cough were little more than a third of the average number; this disease was not prevalent last month in any of the sanitary districts. The 33 deaths referred to different forms of "fever" were 33 below the corrected average, and there was no marked excess of fever mortality in any of the sanitary districts. The 722 fatal cases of diarrhœa were as many as 272 below the average; this disease was proportionally most fatal in Paddington, Fulham, Islington, St. George-in-the-East, Poplar, Rotherhithe and Greenwich. In conclusion, it may be stated that the mortality in London during August from these principal zymotic diseases was nearly 18 per cent. below the average, owing to the fact that the mortality from whooping-cough and from diarrhœa was unusually low.

Infant mortality in London, measured by the proportion of deaths under one year of age to registered births, was equal to 177 per 1000 during August; the lowest rates of infant mortality were recorded in St. George Hanover-square, St. James Westminster, Hampstead, St. Martin-in-the-Fields and City of London; the highest rates in Hammersmith, St. Saviour Southwark, St. George Southwark, St. Olave Southwark, Rotherhithe and Wandsworth.

THE SERVICES.

ARMY MEDICAL SERVICE.

Surgeon-Captain W. A. Morris, Army Medical Staff, has been appointed to the staff of the Royal Victoria Hospital, Netley.

MOVEMENTS OF THE MEDICAL STAFF.

Deputy-Surgeon-General Comyn has resumed duty at Bradford. Surgeon-Captain Dixon has been transferred from Aldershot to Preston for duty. Surgeon-Captain Elderton has joined at Portland and Surgeon-Captain Hains has rejoined at Devonport. Brigade-Surgeon-Lieutenant-Colonel C. A. Maunsell has assumed the duties of Principal Medical Officer, Cork district. Surgeons-Captain Russell and Perry Marsh have arrived at Gibraltar for a tour of service. Surgeon-Captain Hardy has proceeded to Chichester. Surgeon-Major Peyton and Surgeon-Captain Frayer have quitted the Belfast district on leave before embarkation for duty abroad. Surgeon-Captain Wild has reported himself in Edinburgh. Brigade-Surgeon-Lieutenant-Colonel Stevenson has assumed the duties of Professor of Military Surgery at Netley. Surgeon-Major Lamprey has reverted to general duty in the Home District. The death of Surgeon-Major J. Lauder, retired pay, and lately employed at Penally, is reported. The deaths from cholera at Murree of Surgeon-Colonel Allan and Surgeons-Captain H. N. Kenny and Fowler are also reported. Surgeon-Captain Addison has embarked for India on a tour of service. Brigade-Surgeon-Lieutenant-Colonel Murray has left Bermuda for England on leave of absence. Surgeon-Lieutenant-Colonel Fairland has arrived in England from Bermuda on appointment to the Assistant Professorship of Military Medicine at Netley. Surgeon-Captain Baird has embarked for a tour of service in India.

INDIAN MEDICAL SERVICE.

The services of Surgeon-Captain Alcock, Surgeon Naturalist, Marine Survey of India, have been placed at the disposal of the Home Department for employment as Deputy Sanitary Commissioner of the Metropolitan Circle in Bengal. The services of Brigade-Surgeon-Lieutenant-Colonel G. Thomson, medical adviser to his Highness the Maharaja of Patiala have been placed at the disposal of the Government of India in the Military Department. Assistant-Surgeon Lallubhai B. Kaji, L.M. and S., has been appointed to act as Medical Officer in Charge, Larkhana Dispensary (Sind), from July 29th, 1892, during the absence of Assistant Surgeon M. G. Thadani. Surgeon-Captain J. M. D. Smyth has been appointed to act as Superintendent, Lying-in-Hospital, Madras, during the absence of Surgeon-Lieutenant-Colonel A. M. Branfoot, M.B., on leave. Surgeon-Captain E. H. Wright has been appointed to act as Resident Surgeon, General Hospital, during the employment of Surgeon-Captain Smyth on other duty. Surgeon-Captain D. G. Marshall, I.M.S., has been appointed to the Civil Medical Charge of Roorkee, in addition to his military duties, from the date of taking charge from Surgeon-Captain H. J. Pocock. Surgeon-Captain J. J. Pratt, Civil Surgeon, Gonda, on being relieved by Surgeon-Lieutenant-Colonel C. Cameron, has been transferred to the Bahraich district. Surgeon-Major H. K. McKay, Officiating Civil Surgeon, Nagpur, has been appointed to be Honorary Surgeon, Nagpur Volunteer Rifle Corps, vice Surgeon-Major G. F. A. Harris, I.M.S., on furlough, and who has been placed on the rolls as a supernumerary. On being relieved by Surgeon-Captain D. W. Scotland, M.B., Assistant Surgeon Surendra Nath Barat, Officiating Civil Surgeon and Superintendent of the Gaol,

Betul, has been appointed to the Main Dispensary, Saugur. Brigade-Surgeon-Lieutenant-Colonel S. B. Hunt, Indian Medical Service, has been appointed to officiate as Principal Medical Officer of a District Command, during the absence of Surgeon-Colonel C. Sibthorpe on furlough. Surgeon-Lieutenant W. C. Sprague, M.D., has been appointed to act as Civil Surgeon, Dhulia, during the absence of Surgeon-Major K. A. Dalal, M.B., on privilege leave. Surgeon-Major C. L. Swaine, M.D., Madras Establishment, Medical Officer, 2nd Infantry, Hyderabad Contingent, has been appointed to officiate as Sanitary Commissioner, Hyderabad Assigned Districts, during the absence on furlough on medical certificate of Surgeon-Lieutenant-Colonel C. Little, M.D. Surgeon-Major G. Shewan, Officiating Civil Surgeon of Balasore, is to officiate as Civil Surgeon of Shahabad during the absence on furlough of Surgeon-Major R. Macrae. Surgeon-Captain W. G. Thorold, Civil Surgeon, Kheri, is to officiate as Civil Surgeon, Gorakhpur, during the absence on privilege leave of Surgeon-Major J. Moran. Surgeon-Captain G. J. H. Bell, Bengal Establishment, whose services have been placed at the disposal of the Chief Commissioner, is appointed to be Superintendent of the Insein Gaol.

NAVAL MEDICAL SERVICE.

The following appointments have been made:—Fleet Surgeon Valentine Duke to the *Dreadnought* (dated Sept. 13th, 1892). Surgeons: Hugh W. Macnamara to the *Royal Sovereign* (dated Sept. 6th, 1892); Horace B. Marriott to the *Colossus* and George Ley to the *Hotspur* (both dated Sept. 13th, 1892).

VOLUNTEER CORPS.

Artillery: (Duke of Cornwall's) (Western Division Royal Artillery): Joseph Thomas Harty, Gent., to be Surgeon-Lieutenant (dated Sept. 10th, 1892).—*Rifle:* 1st Volunteer Battalion, the Buffs (East Kent Regiment): Surgeon-Lieutenant J. H. Mitcheson resigns his commission (dated Sept. 10th, 1892).—Surgeon-Lieutenant J. G. McCann resigns his commission (dated Sept. 10th, 1892).—2nd Volunteer Battalion, the Oxfordshire Light Infantry: Surgeon-Captain J. A. Rigge to be Lieutenant (dated Sept. 10th, 1892).—1st Volunteer Battalion the Northamptonshire Regiment: Surgeon-Captain G. S. Payne to be Surgeon-Major; to resign his commission; also to be permitted to retain his rank, and to continue to wear the uniform of the Battalion on his retirement (dated Sept. 10th, 1892).—3rd (the Buchan) Volunteer Battalion, the Gordon Highlanders: The undermentioned Surgeon-Captains to be Surgeon-Majors (dated Sept. 10th, 1892): N. Lawrence and R. M. Wilson.

THE CHAIR OF PATHOLOGY AT NETLEY.

To the Editors of THE LANCET.

SIRS,—I have read in THE LANCET a letter from Dr. Kenneth Campbell, also a paragraph of subject matter stating that great dissatisfaction has been caused by the appointment of a professor of pathology in the person of a civilian medical man. I beg to suggest that the appointment at Netley may be open to all members of her Majesty's services, including the medical officers of the Royal Navy, if there be any fitted for such a distinguished position. They, I think, have an equal opportunity with their military *confrères* of obtaining an equal experience in that peculiar branch of pathology required for these appointments, and as they have nothing in their own service to look forward to in the way of professional honours, I think it would be almost an injustice to exclude them from a remote chance of obtaining a well-known and honourable position in the medical world. I may add that it would be a generous and chivalrous opportunity for military officers to show a real act of kindness to, in many ways, their less fortunate brother officers.

I am, Sirs, yours faithfully,

GEORGE EDMONDS, Surgeon, R.N.

H.M.S. *Abyssinia*, Bombay, Aug. 22nd, 1892.

THE NEW WAR MINISTER.

The appointment of Mr. Campbell-Bannerman to the post of War Minister is, we believe, generally regarded with satisfaction by different branches of the army. He has the reputation of being a clear-headed and excellent man of business, and there are at the present time a number of matters claiming his consideration which will speedily put these qualifications to the test.

THE DEPRECIATED RUPEE.

The fall in the value of the rupee, which does not yet seem to have reached its downward limit, will probably compel the Government to take some steps before long. The present rate of exchange inflicts a great hardship on all married officials and soldiers serving in India with wives and families to support in this country. Numerous meetings have taken place in various parts of India, and resolutions and petitions have been forwarded to the Government of that country. The finances of India, with its depreciated silver currency, must be a matter of extreme difficulty, not only to the Government there, but to the Minister for India in this country, and it is not, unfortunately, the only complicated and difficult subject with which the Government will soon have to grapple in earnest.

MILITARY SERVICE IN GERMANY.

The question of reducing the term of service in the army still occupies a share of public attention in Germany, notwithstanding that most of it is taken up with the larger and more pressing consideration of the existing cholera epidemic. The heavy financial burden imposed on the nation in the shape of taxes, and the strain induced by the withdrawal of such a large portion of the population from industrial pursuits, have naturally led the Germans to consider whether the present limit of three years' training with the colours might not be reduced to two, without detriment to the army and certainly with advantage to the country. These proposals are backed up by the Liberal party in Germany, and it seems probable that some compromise will be effected by which a two years' limit will be generally adopted for the Infantry, with the understanding that all conscripts who have not perfected their military training in that time will be required to extend it with the colours for three years, or until they have reached the required standard of efficiency.

THE GERMAN ARMY MANŒUVRES AND THE CHOLERA.

In consequence of the prevalence of cholera the manœuvres of the German Army have been countermanded by order of the Emperor. Although the epidemic at Hamburg has not extended so as to involve any places in the vicinity of that city to any extent, it has been deemed prudent to avoid the risk attending the concentration of large bodies of troops at the present time and their subsequent dispersion to different parts of the empire.

THE BLACK MOUNTAIN EXPEDITION.

Officers of the British and Indian Army Medical Services are, of course, as keen to obtain information about any little expedition that may be going on, and to be included in it, as officers of other branches of the army. For one thing, promotion sometimes comes that way, and for another, opportunities for distinction or the exhibition of enterprise occasionally present themselves, and, in any case, field service always adds something to experience in the way of field hospital administration and management, transport and newly devised or applied methods of treatment required by the nature of the country traversed or by the special character of the expedition itself. In all these respects India affords an excellent training ground. At the present time there is more than one of these small expeditions on hand in that country. There is the expected movement of the Black Mountain force for possible service in the Gomul Pass, the occupation of the Kuram Valley by a small body of native troops in accordance with the request of the Ameer of Afghanistan, with the view of preserving order in that neighbourhood, and Lord Roberts's projected military mission and conference with the Afghan ruler, not to say anything of the possible development of affairs in the Pamirs, a matter which concerns the Chinese Government rather than that of this country.

THE FOREIGN SERVICE TOUR.

As the one serious grievance which now affects medical officers of executive rank is the length of the tour of service abroad, it is to be hoped that Mr. Campbell-Bannerman will see his way to a favourable consideration of it. We do not pretend to know on what grounds it was originally decided to increase the length of the tour from five years to six at some stations and from three years to four at others; but it has been stated in Parliament that the obstacle to a resumption of the old rule is the increase of expense which it would involve. This appears to us a most lame and impotent conclusion; for if an economy has really been effected at the cost of much suffering and inconvenience to the Service there can be no good reason for persisting in it. It is not a question of increase of expense at all, but of resuming an expenditure which has been unwisely retrenched. It should have been

apparent from the moment that officers on half-pay were appointed to home stations that the effect would be to curtail the amount of home service for those on the effective list, yet that very moment was chosen to lengthen the tour abroad, thereby accentuating the grievance. If the employment of half-pay officers at home facilitated a reduction of the effective staff, surely the economy was sufficient without seeking for further savings at the price now paid for it in the loss of health and prolonged expatriation imposed upon the Medical Staff. There are many officers who hold that it is unjust in principle to fill up so many of the desirable stations at home from the half-pay list. This is perhaps rather a one-sided view; but it must be conceded that it is unjust so to prolong the term of service abroad that a career in the Medical Staff becomes one of perpetually recurring exile.

Correspondence.

"Audi alteram partem."

HALSTED'S OPERATION FOR THE RADICAL CURE OF INGUINAL HERNIA.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Sept. 10th, Mr. Frederick Page reports a case of radical cure of an inguinal hernia by Halsted's method, and compares the operation with that of Bassini, rather to the disadvantage of the latter. Now I have performed Bassini's operation eight times with the most satisfactory results, and I happen to be just as enthusiastically in favour of it as Mr. Page appears to be in favour of that of Halsted, and I wish to point out that Mr. Page has been—quite unintentionally I do not doubt—a little unfair on the question of the merits of the operation that bears the name of the distinguished Italian surgeon. In contrasting the relative advantages of the two operations Mr. Page says: "By every other method the canal is left occupied by the cord and recurrence is common. ..... Recurrence is far less likely to occur—i.e., by Halsted's method."

Mr. Page may possibly be in possession of statistics which he regards as sufficiently trustworthy to prove that Halsted's operation is less likely to be followed by a recurrence of the original hernia than is that of MacEwen, though I venture to think that the short time that the former procedure has been before the profession does not allow of any approach to dogmatism upon the point; but I venture to assert that he cannot have the same reason for preferring it to Bassini's, for the simple reason that—at any rate to the best of my knowledge—all the statistics that have been published concerning the operation show an entire absence of failure. Bassini reports in his original paper[1] 108 cures (lasting for a period of from one to four years after the date of operation) that he was able to trace out of the 262 cases that he had done; while Paul Berger has repeated the operation thirty times without a failure. It is in face of figures such as these that I venture to think that Mr. Page's statements bear a little hardly upon the operation. For my own part, the reasons that incline me to favour Bassini's operation in preference to all others are briefly these:—By means of it the external abdominal ring is firmly sewn up opposite the point at which the cord emerges from the internal, and conversely the internal ring is firmly occluded behind the point at which the cord passes into the scrotum, and thus a new oblique inguinal canal is formed and the rings are reinforced in the valvular manner that nature has planned. In MacEwen's operation, and still more so in Halsted's, the track through which any second hernia has to make its way is the shortest possible, and a direct opening into the abdominal cavity exists through which the cord has to pass, and therefore the chance of averting the recurrence of the hernia lies solely in the thoroughness and solidity of the occlusion of the ring. I freely admit, however, that this preference is a theoretical one and that there is at present no direct practical proof of it, and that is just the reason that has induced me to write this note to point out that it is perhaps a little premature to laud one particular operation at the expense of others without supporting the dictum upon the basis of practical statistical experience.

I am, Sirs, yours faithfully,

Weymouth street, W., Sept. 13th, 1892. FRED. F. BURGHARD.

[1] Arch. f. Klin. Chir., 1890, t. xl., p. 429.

MIDWIVES AND ABNORMAL CASES.

To the Editors of THE LANCET.

SIRS,—The enclosed report of an inquest lately held at the Coroner's Court, Hammersmith, distinctly points to the urgent call for some legislation that may prevent the sacrifice of maternal life from the crass ignorance and culpable, if not legal, negligence of the midwife in not calling in medical aid till treatment has become useless. I give you a few of the symptoms. The after-pains continued the whole puerperal week, and, instead of daily being less, increased in severity, the patient had no sleep till the eighth day, and then only from a strong opiate procured by the midwife from a chemist (another evil of counter-prescribing, for this dose masked the symptoms), when she obtained sleep and said she was better. The after-pains from the second day were accompanied with nausea and sickness. The lochia were described to me as horribly offensive. The temperature on my visit on the tenth was 103°; respiration quick and short, the patient excited and rambling, the abdomen distended and tender. The poor woman was so ill the night before I was called in that her husband and a lodger sat up with her all night. Surely any midwife ought to have recognised these symptoms as very serious and obtained qualified medical assistance long before. I opposed the late Midwifery Bill because it was prospective and would have certificated this very ignorant woman and all the "Mrs. Gamps" of her class, but I am not opposed to some useful legislation demanded in the interest of those few women who cannot protect themselves, and think as I advocated in my address (page 5), when contesting a seat on the Medical Council as a direct representative, midwives should only be allowed to act when a doctor has been already engaged and so to act under the eye and responsibility of a medical man, and it would be better that they should be registered as obstetric nurses rather than midwives. I ask for the insertion of this letter, valuable and limited as your space is, because it will, I think, interest numbers of your readers and have a practical value, bearing as it does on this question now engaging the thoughts of a large section of the profession, but particularly the members of the select committee of the House of Commons on the Midwives Registration Bill. On a rich patient, the doctor would be the ordinary attendant as is now the case; on a poor patient the club or parish doctor.

I am, Sirs, yours obediently,

Sept. 11th, 1892. FREDERICK H. ALDERSON, M.D.

ON THE USE OF IRON SALTS IN VARIOUS FORMS OF DIARRHŒA.

To the Editors of THE LANCET.

SIRS,—Some few months ago, while engaged in the study of Bunge's Physiological and Pathological Chemistry, as translated by the late Dr. Wooldridge, I was much struck by his theory of the action of iron in chlorosis. While thinking this over, though not in entire agreement with him, I was impressed by the idea that it was not only possible but probable that iron might have a decided action in many cases of diarrhœa, by combining, as bismuth does, with the sulphuretted hydrogen and alkaline sulphides, to form inert insoluble metallic sulphides, and so check the diarrhœa by removing secondary, if I may so call it, irritation. It did not appear to me to be necessary to give the astringent forms of iron, on the assumption that, whatever forms of iron are given, it is probable that in the stomach they are converted into the chlorides and ultimately in the bowel after various changes into sulphides. The salt I chose for chief use was the citrate of iron and ammonia, though in some cases I used Blaud's pills. For some time now I have treated a large number of cases of infantile diarrhœa, in many cases apparently due to defective sanitation, of irritative diarrhœa, and some of tubercular diarrhœa by this means and with almost unvarying success. The rapidity with which the offensive smell of the motions disappears has exceeded anything I had thought likely, and half-a-dozen of my cases have apparently been so successful that I feel justified in suggesting that others may have a like success. In two or three cases too early a stoppage of the treatment was followed by a return of an offensive diarrhœa, which was soon checked again by resuming it. In one case, in a woman, a very violent attack of four days' duration, with intense griping and copious, watery,

very offensive evacuations at frequent intervals following the eating of food, which her husband said at the time was unfit for use, was relieved in twelve hours, and entirely removed in two days. Another case with motions of a distinctly typhoid fever character, but with no spots, in which I was watching the temperature, ended in the same favourable way. Children of three or four months old take without any inconvenience five grains of the salt every four or five hours; adults up to thirty grains every two or three hours. While discussing the therapeutic possibilities of iron, the following, though not entirely connected with its use in the treatment of diarrhœa, seems worthy of note. The combination of the tincture of the perchloride of iron with the solution of muriate of morphia yields a green solution, I imagine, with the formation of apomorphine or some similar derivative. Be this what it may, I have seen from the combination more distinct and rapid relief to the cough and diarrhœa of phthisis than from the administration of the drugs separately.

I am, Sirs, yours faithfully,

Rochdale, Sept. 12th, 1892. WILLIAM STANWELL.

"A CASE OF FRACTURE OF THE HUMERUS FROM DIRECT MUSCULAR ACTION."

To the Editors of THE LANCET.

SIRS,—The following case may be of interest to your readers as most uncommon if not unique. On July 22nd I was called to see a gentleman aged thirty, not extremely muscular, but well nourished and perfectly healthy in every respect. He gave me the following history: Whilst trying to "throw the cricket ball," practising for some athletic sports, having made his throw he felt his arm suddenly give way—the ball went about seventy yards—and he heard a report which everyone else in the field heard distinctly also. He tried to raise his arm and could not. On examination I found a transverse fracture of the right humerus situated at the junction of the middle and lower thirds. I set it in the usual manner, took it down on Aug. 19th, and he is now able to resume his occupation. I am, Sirs, yours truly,

Sept. 13th, 1892. J. W. HARRIS, L.R.C.P. LOND., M.R.C.S.

MIDWIVES' REGISTRATION BILL.

To the Editors of THE LANCET.

SIRS,—As one who has read with much interest your account of the proceedings of the Select Committee in the matter of the Midwives' Registration Bill, I believe I am not alone in taking exception to the evidence as given by Dr. James Edmunds regarding the high mortality among lying-in patients attended by general practitioners as compared with midwives. To me it seems he gives the reason for this in his evidence when he says, "If any intercurrent illness occurred she would turn the patient over to a medical man." Dr. Hugh Woods gave the answer to this when he said "cases usually passed into the hands of doctors when death became imminent, and so went to their credit." I have long been under the impression that to get at the true state of affairs some sort of legalised form of death certificate should be in use, so as to show to the registrar whether a duly qualified person attended during the confinement or not. May I ask, would it be right for the doctor into whose hands these cases now pass to state in the certificate: (*a*) Parturition; attended by a midwife; (*b*)——? I am, Sirs, yours truly,

JAS. T. T. RAMSAY, L.R.C.P.Edin. &c.

Blackburn, Sept. 10th, 1892.

OUR DUTY TO OUR PATIENTS.

To the Editors of THE LANCET.

SIRS,—On p. 374 of THE LANCET of Aug 13th I notice an article headed "The Hygiene of the Teeth." Doctors are often some of the worst sinners against their patients' health; for how frequently does one meet with a case of dyspepsia or neuralgia arising from faulty teeth, the latter attributed, and in many cases not without good cause, to having taken a large quantity of medicine in some previous illness? Those who are under the unpleasant necessity of dispensing their own medicines can at least use labels with directions that the mixture is to be taken through a tube or quill. Hospitals might do the same, all practitioners might take the like precautions, whilst some check should be put upon the sale of those patent medicines that are known to act injuriously in this respect. Any chemist can make the required addition to an ordinary label, or procure a supply ready printed from a wholesale firm. Whilst looking after the rest of the body it is our duty not to damage so important an organ as a tooth. It matters not to us that some patients should refuse to carry out an instruction they may regard as irksome and valueless. Great stress is frequently laid on the functions of the rectum and the colon, but how much discomfort might be saved were due attention given to the care and cleanliness of the teeth and the proper mastication of food? Among the poor one frequently sees long unsightly teeth thickly coated with green, foul-smelling matter and standing in irritated and receding gums. Their owners are troubled with an unpleasant taste in the mouth—acidity, flatulence and other attendant evils. Many will not go to the trouble of procuring floss silk, excellent though it be, but they readily make use of a charred match to clear away some, at any rate, of the fermenting material between the teeth. Perhaps in ordinary practice it might be thought bad taste to supply patients with a few printed simple rules; but amongst the poor and in unopposed practices it appears to me that great good might result, and no harm be done, by the distribution to one's own patients of leaflets such as that now enclosed. Any required additions or alterations can easily be made to suit particular cases, and so long as no name is printed there seems but small possibility of encroaching on one's neighbour's practice.

A large London hospital has kindly given permission for the reprinting of their hints on the bringing up of babies. The rising generation is greatly damaged by being surfeited with boiled bread, biscuits, tea &c.—"just what we have ourselves." A few simple, common-sense rules would help to improve the health of those destined for a life of toil for which under present circumstances they are unfitted, and partly because, ere the struggle has begun, their constitution has already been impaired. Could you, Sirs, or one of your readers, mention any similar leaflet giving directions for the care of those recently confined, I feel sure that many practitioners would be only too glad to procure a supply for distribution, under suitable circumstances, to their patients, and thus many of the evils now looked upon as usual after confinement would be obviated. It frequently happens that a woman, from shortsightedness, gets up prematurely from her bed to undertake duties for which she is utterly unfit, thus rendering herself temporarily or perhaps permanent y incapacitated for her duties as a mother. The leaflets cost about 9*s.* per thousand, so that the expenditure of a single penny might place many families in a position of far greater comfort and perhaps of even helping to improve the vital statistics of the nation.

I am, Sirs, yours truly,

Reading, Sept. 7th, 1892. SPES.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Licensing Sessions.

THE annual Licensing Sessions for the city of Liverpool have just concluded, the result being that there will shortly be nineteen fewer houses licensed for the sale of intoxicants than last year, and forty-five less than the year before. It is possible that this number may be slightly lessened on appeal. The magistrates have shown a firm determination to suppress any houses which are the resort of prostitutes or the scene of repeatedly disorderly conduct. They have also insisted upon the internal structural arrangements being such as to afford perfect facilities for the supervision of the police, and that the person named in the licence shall personally conduct the business and be responsible for whatever occurs on the premises. There is every reason to believe that these measures will lead to a reduction of intemperance and of the other evils to which it gives rise.

City Morals.

Among other resolutions brought before the city council at its last monthly meeting was one from the Watch Committee proposing that Parliamentary powers should be sought to enable the police to enter any house suspected to be a brothel and to arrest any person of either sex found there. The recent action of the Watch Committee has led to the prosecution

and conviction of a large number of persons keeping brothels in streets where such houses have been for many years tolerated. The result is that many of these houses are empty and their former inmates have been scattered, only, it is feared, to inhabit houses in other parts of the city hitherto free from them. As much feeling was exhibited against the proposed resolution it was withdrawn.

An Epidemic of Violence.

A tramcar conductor is lying in the Royal Infirmary suffering from concussion of the brain, the result of a blow on the head from a stick. A boy is lying at the Stanley Hospital suffering from a similar injury, the result of an assault, his assailant having first lifted him up and then dashed him violently to the ground. Several of the city police constables are on the "hurt list" as the result of violent assaults made on them during the last few days. A young man is lying in the Bootle Hospital suffering from a gunshot wound in the head; a bullet and a piece of bone have been extracted, but he remains in a very serious condition. The shot was fired by a man in custody, who states that he fired thinking that it was a blank cartridge.

The Health of the Port.

No other case of cholera has been reported, and all apprehension of any serious outbreak here has passed away. At the same time there has been no relaxation of vigilance on the part of the authorities, and any vessels coming from infected ports will be stopped and the crew submitted to careful medical examination before being permitted to land.

September 14th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Small-pox.

A SHARP though as yet limited outbreak of small-pox has recently occurred at Failsworth, a manufacturing district on the north-eastern confines of Manchester. The first case occurred on August 25th, and it was then ascertained that the disease had been lurking undetected for six weeks before its presence was officially suspected. Up to the present time, at least ten small-pox cases have been admitted from this district to Monsall Hospital, which is fortunately close by. One of the patients is the sanitary inspector of the district, who was stricken with the disease in the course of his duties, and was removed to hospital early last week. The medical officer of health for Failsworth has apparently been unremitting in his exertions against the further spread of the malady, and he evidently receives the support of the sanitary authority. One good result of this local outbreak has already been made public; at the last monthly meeting of the Failsworth local board, the Act for the Compulsory Notification of Infectious Disease was formally adopted, Failsworth being one of the very few districts in this neighbourhood which had not previously enjoyed the protection which that Act is capable of conferring. Although, as is well-known, small-pox has been rife in several Yorkshire towns and villages in daily communication with Manchester, and individuals suffering from that disease have been from time to time detected either in the common lodging-houses or in the workhouse tramp wards, nevertheless small-pox has not as yet obtained a foothold in the city. Every case has been removed to the hospital and isolated as soon as discovered. The desirability of vaccination or revaccination has been impressed upon all persons who have been in contact with infection, and the disinfection of contaminated bedding or clothing has in all cases been insisted on.

Cholera Precautions.

The sanitary authority of the city have taken timely precautions against the possible importation of persons from abroad who may arrive here whilst incubating cholera. The corporation have with commendable promptitude made arrangements with the authorities of Monsall Hospital for the isolation and treatment of any cases of cholera that may find their way into the city. They have also erected additional temporary accommodation at Monsall to meet any emergency in regard to cholera which is likely to arise. With the object of restoring public confidence the Sanitary Committee have given the city officer of health *carte blanche* to take whatever action he may consider advisable for the protection of the public health. One of Dr. Tatham's earliest acts was to organise a house-to-house visitation of the poorer districts of the city. In the Jewish quarters of the city handbills of precautions against diarrhœa and cholera, printed in Hebrew, have been circulated from house to house. About half a dozen persons from Hamburg have arrived here within the last ten days, and as they have come in infected vessels they have been kept under the necessary supervision by the medical officer of health.

Relief of Pauperism in Manchester.

The Board of Guardians of the Manchester Union have just published an instructive report on the working of their Relief Department. The report is from the pen of Mr. R. W. Guilinette, assistant clerk to the guardians. There appears to be an increase in the number of applicants for relief, equal to 9 per cent. on the numbers of last year. In 23 per cent. the cause of destitution was stated to be "want of work." This, however, according to Mr. Guilinette, must not be taken to mean that work was abnormally scarce during the year, but rather that many of those in want of work laboured under some physical or mental shortcoming which rendered their services of little market value. Persons of this class are apparently numerous, and Mr. Guilinette says of them "that they are the last to benefit by a revival of trade, but the first to feel its decline." In not less than 64 per cent. of the total cases relieved, the ground on which assistance was claimed appears to have been either old age or some other incapacitating infirmity.

September 14th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Cholera Alarms and Precautions.

THE alarm felt in Newcastle and district as to cholera has a good deal subsided; still, it is right to say that the necessary precautions are continued, and the city in any case will be much the better for the extra cleansing and sanitary attention which it is receiving. The War Office authorities have applied to the city council for leave to erect a temporary hospital on the Newcastle Moor in case of its being required for the troops in barracks, and the request has been acceded to. There has been a good deal of alarm at Blyth owing to a Hamburg steamer arriving with a case of diarrhœa, but the medical officer of health reports the river and town as being in a healthy state; it has been decided, however, to increase the hospital accommodation in case of need. The Blyth local board has applied to Sir Matthew White Ridley for power to erect a hospital on some portion of the Lints. Mr. Alderman Richardson's motion respecting increased powers for the Tyne port sanitary authority was carried last week. The powers meant are of course quarantine, and the necessity for this was strongly pointed out by several members. For instance, it was shown that, had the case of cholera on board the *Elbe* been a few days longer in developing, the patient and his mates would have been on shore among their friends.

An interesting Presentation to a Cumberland Surgeon.

Mr. F. Postlethwaite, M.R.C.S., of Stapleton Brampton, Cumberland, was waited upon last week by a number of patients and friends in the district, who presented him with a new and handsome carriage. Mrs. Postlethwaite was presented at the same time with a purse of gold.

Death of Mr. John Churchill, M.R.C.S., L.S.A.

Mr. Churchill died at his residence, Hall Croft, near Carnforth, last week. He was educated at the Middlesex Hospital and qualified so far back as 1839. He practised mostly in Whitehaven, and retired about thirty years ago. He was placed on the Commission of the Peace for the county in 1880. The deceased gentleman was a bachelor, and it is understood that his body will be cremated at Woking.

The Diagnosis of Malignant Infectious Disease.

Dr. Whamond of Jarrow has issued a circular to the profession, in which he takes exception to the statement of our medical officer of health to the Tyne Port sanitary authority "that 95 per cent. of our medical men are incapable of

diagnosing a case of malignant infectious disease." Dr. Armstrong's remarks were based on a case of hæmorrhagic small-pox which unfortunately came to Newcastle from North Shields, where it had escaped notice. Now the case even at Newcastle was not diagnosed at once, as the man was about the Infirmary waiting-rooms, and was afterwards taken into a ward. As pointed out at the time in THE LANCET in an annotation on the subject, the diagnosis of this fatal form of small-pox is by no means always easy, though a few hours will often clear up the obscurity. Dr. Armstrong is a strong advocate for young graduates acquiring a knowledge of the treatment of infectious diseases before they begin practice, and he probably had this in view when he made the statement.

Sunderland: Election of a Medical Officer of Health.

The election of medical officer of health for Sunderland has been watched with some interest by the profession, and, as was expected, the post has been given to Mr. John C. Wood of Sunderland. Mr. Wood has been for some time surgeon to the police and deputy medical officer of health, and his appointment has given general satisfaction.

Tynemouth Water-supply.

The water-supply at Tynemouth has long been a drawback at this otherwise popular health resort. A special meeting of the Tynemouth Town Council has been held for the purpose of considering a report presented on this matter by the medical officer of health and the borough engineer, which stated that the available supply only equalled 14·8 gallons per head per diem, while at least twenty-eight gallons per head per diem were considered necessary. The report further stated that any arrangement that did not provide a reserve store for at least one month could not be considered as satisfactory. On the other hand, it is stated that there is at present a considerable waste of water, described as wholesale. Consequent upon the cholera scare the sanitary authority has given certain directions as to flushing and cleansing which, if not discontinued, will compel the borough authorities to restrict the supply to six hours a day. In Newcastle we have an abundant supply, and I believe sufficient to spare to supply Tynemouth and North Shields should the necessary connexion be made which I believe is under consideration.

Newcastle-on-Tyne, Sept. 12th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.

Arrangements for Women Students at the Edinburgh Royal Infirmary.

THE managers of the Royal Infirmary some weeks ago devised steps which will provide for the medical education of women within the walls of the infirmary. As was stated in THE LANCET at the time that the purchase was made, the managers acquired property to the west of Lauriston-lane, with a view to the extension of the accommodation for patients. The building at present on the purchased land is to be used for the nursing and serving staff, and thereby two additional wards are to be available for the reception of patients, and these are to be used for the clinical instruction of women. One is to be medical and the other surgical, and it is expected that the senior assistant physician and the senior assistant surgeon will have charge of them. In addition all the special departments—the ear and throat, eye, skin, gynæcology and lock—are to be open to the women students, presumably at different times from the male students; but the cliniques may be mixed, this point, so far as is known, not being definitely settled. The medical out-patient department will also be made more or less available for women students. No further arrangements, so far as is known, have been made. There is no rumour of the Edinburgh University taking steps similar to those taken by the Glasgow University for providing teaching that will qualify women to appear for the University medical examinations, although the Commission gave them the power to do so.

Edinburgh University Financial Statement.

Reference was made last week to a Parliamentary paper prepared by the University Court on the finances of the University There has been published another of these statistical reports dealing with the incomes of the University officers. The report is for the year ending Sept. 30th, 1891, and is furnished in accordance with the requirements of the Universities (Scotland) Act, 1889. It contains much material for contemplation by those interested in medical education in the University. In none of the Faculties can many of the occupants of chairs be commiserated on the poverty of their livings, but it is with medicine we are specially interested. Details of shillings and pence need not be particularised. The gross incomes of each professor are given below and also the amount he spends on assistants and other expenses:—

	Income.	Expenses
Professor of Botany	£1785	£295
,, Physiology	2466	783
,, Practice of Physic, including Clinical Medicine	1752	78
,, Anatomy	2984	493
,, Chemistry	2519	1190
,, Midwifery, including Clinical Medicine	1265	110
,, Natural History	1829	320
,, Materia Medica, including Clinical Medicine	2431	370
,, Clinical Surgery	1105	80
,, Medical Jurisprudence	999	252
,, Surgery	1602	450
,, Pathology and Clinical Medicine	2398	393

The income and expenses of the Professor of Pathology given here are from the return for the preceding year, as they are not filled up for last year. The number of assistants in each department is as follows:—Botany one, salary £220; Physiology three, salaries £100 to £400; Practice of Physic one, salary £100; Anatomy five, salaries £42 to £285 10*s.*; Chemistry five, salaries £50 to £275; Midwifery two, salaries £65 10*s.* to £100; Clinical Medicine one, salary £160; Natural History one, salary £300; Materia Medica two, salaries £120 and £200; Clinical Surgery one, salary £50; Medical Jurisprudence one, salary £250; Surgery three, salaries £100 to £150; Pathology (previous year) three, salaries £20 to £170. The number of students attending some of the practical classes are: Physiology, 338; Anatomy, 534; Chemistry, 309; Pathology, 240. The total number of students matriculated for the academic year was 1809 and for the summer session only 194. There is one other startling set of figures. The University has laboratories in which provision is made for work beyond the elementary and rule-of-thumb work of what are called practical classes. The following are the laboratories in which work of the kind has been done and the number of persons who have worked in them: Physiology, 10; Chemistry, 20; Medical Jurisprudence, 35; Pathology, 0. The above details speak for themselves and put a strange complexion on the cry that original work is not done in the University as there are no funds to pay workers.

Leith and Cholera.

There is considerable talk in some quarters as to the apathy of Leith at the present time. It has a large trade with the Continent, and usually a very large one with Hamburg. The notification of infectious diseases is not in force, and it is said that thousands of baskets of fruit have arrived from Hamburg and been distributed all over the country. Ought such things to be?

University Chair of Surgery.

The contest for the chair of Surgery in the University, rendered vacant by the lamented and sudden death of Sir George H. B. Macleod, has been much simplified by the announcement that Dr. H. C. Cameron does not intend to stand as a candidate. This leaves the field practically clear for Dr. William Macewen of the Royal Infirmary, for, though other candidates of local renown in Glasgow and Edinburgh are spoken of, their claims sink into insignificance beside those of Dr. Macewen. The feeling of the profession here is very strong on the subject and is perfectly unanimous, and if by any chance Dr. Macewen were passed over, resentment in both professional and lay circles would be keen, as the people of Glasgow as a whole are proud of their townsman. A memorial was presented to Sir G. Trevelyan on Wednesday last while the right honourable gentleman was on a visit to Glasgow, pointing out Dr. Macewen's eminence as a surgeon and the unanimous desire of the profession that he should be appointed to the office held by his old infirmary chief. I also understand that Dr. Charles W. Cathcart, assistant surgeon in the Royal Infirmary, Edinburgh, is a candidate for the post. Another candidate spoken of is Dr. Crawford Renton of the Western Infirmary, Glasgow. Professor Victor Horsley's name has also been mentioned.

Western Infirmary.

The managers of this institution have determined to transform it into a joint-stock concern, incorporating it under the Companies Acts, 1862 to 1890, and they have just been authorised by the Court of Contributors to sign the memorandum and articles of association to that effect. The principal object to be attained in thus registering the infirmary under the Joint Stock Acts is to obtain perpetual succession, or, in popular phrase, to save the trouble and expense of recurring conveyances of the property of the institution from one set of trustees to another as deaths occurred among them. The memorandum and articles of association have received the approval of the Board of Trade.

Lectures on Cholera in Glasgow.

Dr. J. Lindsay Steven on Monday last delivered the first of a short course of lectures on cholera to the nursing staff of the Glasgow Sick Poor and Private Nursing Association. The lectures are being delivered under the auspices of the directors of the institution and have been thought necessary in view of the near approach of cholera to our country.

Insanitary Houses in Buchan.

Dr. Watt, reporting to the Aberdeenshire County Council Committee, mentions the following cases:—The sleeping apartment at Bilbo-park was still in the same condition. Its greatest height was 5 ft. 6 in., and the ventilation was by means of a skylight opening towards a dung heap. It was separated from the cow-house by a wooden partition so defective that the foul air came through it, and at the other side the foul air from the stable had ready access, the floor being very defective. The house at Tassathill was neither wind- nor water-tight; it had a dung heap within three feet, parts of the bedroom walls were green with mould, and rat holes were plentiful (indeed, a rat-trap was set in the middle of the floor), and the roof and chimney were dangerous. Other houses were not inhabitable.

Health of Aberdeen.

During last week 15 cases of measles, 19 of scarlet fever, 1 of typhoid fever, 11 of whooping-cough and 2 of erysipelas were reported to the medical officer of health, being a decrease of 12 on the whole as compared with the preceding week. There were no cases of diphtheria, typhus fever, small-pox or puerperal fever.

At a meeting of the Public Health Committee of the Aberdeen Town Council held this week it was reported that the estimated expenditure for the ensuing year would be £817 in excess of the income. There will, however, be no increase in the rate, as it is at present at the maximum. There were also considered the plans of the proposed addition to the City Hospital, which are estimated to cost £12,800. After discussion consideration was deferred for some days.

Sept. 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Reformatory and Industrial Schools.

FROM the thirtieth annual report it appears that at the close of 1891 there were seven reformatory and seventy industrial schools in active operation in Ireland. The children in reformatory schools numbered 786 and in industrial schools 8547. The inspector strongly insists on the evil effects of short sentences and states that all authorities agree that sentences to a reformatory should be for a maximum period of five years. It should also be remembered that a five years' sentence does not of necessity mean five years' detention in a reformatory, for managers have power to license after half the sentence has expired, and may obtain a discharge at any time if they can show that it is for the advantage of the young offender. The cost of industrial schools was £160,317 12*s.* 10*d.* or an increase of £2043 11*s.* 9*d.* over that of the previous year; while the cost for each child averaged £17 17*s.* 3*d.*, and for the reformatory schools the average was £21 15*s.* 1*d.* The health of the children has been most satisfactory. In reformatory schools there were no deaths from contagious or infectious disease, or any serious epidemic in any of them; while in industrial schools there were eighty-nine deaths out of about 10,000 children under detention. Of these eighty-nine deaths thirty-six were due to lung disease, and, although the winter has been a singularly bad one, the death-rate from consumption was 3·6 per 1000, as against 4·1 the year before. Ophthalmia was rather prevalent in several of the industrial schools, and the inspector wisely remarks that managers incur a grave responsibility who permit children to be treated for it by any person other than a skilled physician.

Grievances of Dispensary Medical Officers.

On the 10th inst. a meeting was held at the Royal College of Surgeons to consider the propriety of forming a Union Medical Officers' Association. After some discussion it was determined to summon a special meeting of the Irish Medical Association, and that all provincial dispensary officers should be urged to attend.

South Charitable Infirmary, Cork.

At a late meeting of the trustees a letter was received from Miss Dora Allman requesting permission to be admitted to clinical teaching at the South Infirmary session of 1892–93. She pointed out that the council of the Queen's College had already made arrangements for the admission of women to the dissecting-room and to all the medical lectures of the college; while in Belfast last winter six ladies had attended the practice of the Royal Hospital. Miss Allman had recently passed an examination of the Royal University of Ireland, and if refused admission to the infirmary would be unable to remain in Cork to attend lectures. Professor Hartog of Cork College, on behalf of the students, stated that they were in favour of the trustees granting the same facilities to women as to men. The board will hold a special meeting this week to consider the matter.

Proposed Floating Hospital for Cork.

A meeting of the rural health committee was held on Monday to discuss the proposed floating hospital for the harbour, for which Sir John Arnott had offered a hulk, and to consider the question of precautions against cholera. The military authorities propose to land any cases of cholera that may occur among troops arriving in Cork Harbour for treatment at a cholera hospital to be especially formed in the harbour—namely, at Spike Island, Fort Carlisle and Fort Camden. The guardians, however, consider that a floating hospital, as the sanitary committee suggested, is the proper place for sea-borne infectious cases to be treated, and they object to cases being removed to Spike Island or any other place except the floating hospital. Mr. Hodges has recommended that the guardians should purchase a vessel called the *Drowing Sophia*, and a resolution to have that vessel examined and, if advisable, purchased for use as a cholera hospital was adopted. Sir J. Arnott has expressed his willingness to put one of the hulks in Passage Docks in a seaworthy condition and in a sufficient state of repair to enable it to be used for the purpose of a floating hospital.

Queen's College, Belfast.

The report of the President of Queen's College, Belfast (Rev. Dr. Hamilton), has just been printed for the session 1891–92, and it shows that the Ulster College is in a very satisfactory condition. The number of students was unusually large, there being in the Faculty of Medicine 270, in Arts 185, in Engineering 11, and in the School of Law 19. Four students attended in more than one faculty and the total number of students in attendance was 481. There were eight ladies in the classes. The number of freshmen who entered for the first time was 155. A very satisfactory arrangement has been made in connexion with the teaching of pathology, the trustees of the Sorella Trust (created by the late William Dunville, Esq., of Belfast, to perpetuate the memory of his sister, Miss Sarah Dunville, who died in 1863) having informed the President that they propose to provide an endowment of £240 per annum for the establishment of a separate chair in the college, to be called "The Dunville Professorship of Pathology." It is owing to the munificent action of Mr. R. G. Dunville, D.L., nephew of the late Mr. Wm. Dunville, that this has been done. He has also acquired from the trustees a portion of ground belonging to the trust and presented the same to the citizens of Belfast to be maintained for all time as a public park. Mr. W. H. Barrett, M.B., of Edinburgh, has been appointed lecturer on pathology. Reference is also made in the report to the new chemical laboratory which is being built in the college

grounds and also to the projected new building for the students' union. Towards the realisation of this project over £3000 has already been subscribed. The President advocates the erection of a biological and a physical laboratory and increased accommodation for the specimens in the natural history museum. Reference is also made in the report to the great successes of Belfast Queen's College men in the Royal University examinations and to what the college has done through the very distinguished graduates it has sent all over the world.

The Cholera Epidemic.

So far no new cases of cholera have occurred in Belfast and the authorities are taking every precaution to prevent its entrance to the city. An intercepting hospital, built at the Twin Island, has been fitted up, and Dr. Craig of Mountpottinger has been appointed to take charge of it.

The Ormean Park.

A great deal of discussion is taking place in Belfast in reference to the gasworks. Owing to the very rapid increase in the size of Belfast it will be necessary to extend the present gasworks. There is no more room in their present position, but it has been proposed to build the new manufactory in Ormean Park on the opposite side of the river to the old gasometers. Those opposed to this site say it would injure this public park and they advise building in some other place. There is also a strong feeling amongst many that an attempt should be made by the Corporation, who own the gasworks, to introduce the electric light into Belfast. It is stated that at a meeting of the Gas Committee of the City Council, held on Sept. 12th, it was decided not to build in the Ormean Park.

An inmate of the Carlow Lunatic Asylum who had escaped committed suicide this week by hanging himself.

Sept. 14th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

CHOLERA AND ITS PREVENTION BY INOCULATION; EXPERIMENTS IN PARIS.

CONSIDERABLE interest has been aroused by the appearance, within the last few days, in the columns of some morning contemporaries of paragraphs announcing the discovery by M. Haffkine of a successful method of inoculation for cholera. Being desirous of supplying the readers of THE LANCET with a scientifically accurate account of the results hitherto yielded by the method as applied to the human being, as well as of the laboratory experiments upon which the method is based, I accordingly sought an interview at the Institut Pasteur with the discoverer himself. I found M. Haffkine busily engaged in his laboratory. His scientific preoccupations did not, however, prevent him receiving your representative with that quiet, dignified courtesy which is so characteristic of searchers after truth. After some conversation, M. Haffkine very kindly handed me reprints of papers read by him at the Société de Biologie on the 9th, 16th and 30th of July, 1892. These papers, he said, contained all the information I desired. I accordingly send you herewith an analysis of them. Those read on the 9th and 16th of July bore the titles "Le Choléra Asiatique chez le Cobaye," "Le Choléra Asiatique chez le Lapin et chez le Pigeon," respectively. By July 30th, the experiments having been extended to man, the communication made on that date was on "L'Inoculation de Vaccins Anticholériques à l'Homme." In the early experiments the intensification and the attenuation of the cholera virus was the object, advantage being taken of the method so successfully put into practice by the illustrious Pasteur himself and by his pupils in their studies on chicken cholera, anthrax, *rouget du porc* and diphtheria. It was found that when Pfeiffer's plan of introducing cholera bacteria cultivated on the surface of nutritive gelatine into the peritoneal cavity (of guinea-pigs) was pursued the disease was not transmitted from one animal to another, as the microbe disappeared early in the series. In order to procure intensification of the virus by its passage through a series of animals recourse was had to the following manœuvres:—1. A dose of virus collected from a gelatine plate in a sufficient quantity to kill several animals was injected into the peritoneal cavity of the first guinea-pig. The animal died with a peritoneal effusion abounding with microbes, the fluid effused varying, curiously enough, with the size of the guinea-pig. In a large-sized animal the matter was abundant and dilute, whereas it was less abundant and more concentrated in smaller animals. 2. This fluid is left for several hours exposed to the air at the ordinary temperature. 3. It is now inoculated into other animals; those that are small-sized receiving some of the dilute and those that are large the concentrated products.

A series of transmissions thus conducted leads at length to the production of a constant virus (*virus fixe*)—i.e., a virus (yielded by cultivation from the microbe) which is constant as to time and dose in its lethality. After from twenty to thirty transmissions no further intensification was observed. These experiments provided M. Haffkine with a virus whose poisonous properties had increased about twenty-fold, and which killed rabbits and pigeons at doses which were previously innocuous. The problem of the intensification of the cholera virus having been solved, its effect on animals, into whose thigh muscles it was injected, was tried. All these animals died. Introduced subcutaneously, the animal's general health did not suffer in the least, but there was provoked enormous œdema of the limb, which, spreading over a large area, ends in mortification of the tissues involved. Healing, however, ultimately takes place. It was now sought—and successfully sought—to procure an attenuated virus from which these gangrenous properties should be absent. This was done by cultivating it in bouillon at a temperature of 39° C. and in an atmosphere kept constantly aerated (method applied to the diphtheria bacillus by MM. Roux and Yersin). Under these conditions the cholera vibrio perishes rapidly. In order to prolong the experiment sufficiently long for the procuring of the attenuation the microbe is re-sown in a fresh culture medium every two or three days. This method yielded a virus which, inoculated into the areolar tissue of animals in even large doses, did not bring about the phenomena of necrosis with which the concentrated variety is endowed. Now comes the application of this attenuated virus as an inoculating agent (for animals) against Asiatic cholera. The satisfactory discovery was in fact made that a previous inoculation with the attenuated virus prevented all necrosis in animals into whose subcutaneous tissues a quantity of the strong virus was introduced. It was further found that an animal that had been subjected to inoculation, first with the attenuated and then with the intensified virus, was incapable of contracting cholera, whatever mode of production of the disease was adopted. The comma bacillus may with impunity be deposited in the intestine, opium being injected into the peritoneal cavity directly afterwards, after the method of Nicati and Rietch and of Koch. M. Haffkine soon afterwards discovered that the above phenomena were as applicable to the rabbit and the pigeon as to the guinea-pig. The most murderous assaults of the microbe of the cholera now present, as it has been for the past five months, in an endemic form in Paris were resisted by these animals, who had been inoculated first with attenuated and then with intensified virus. It is pointed out by M. Haffkine that the Paris bacillus has shown itself as lethal in the laboratory as the Madras, Calcutta, or Saigon variety.

The protective power of M. Haffkine's anticholeraic vaccine having thus been amply and conclusively demonstrated in the case of animals so varied as guinea-pigs, rabbits and pigeons, its effect on the human being was tried. On July 18th M. Haffkine introduced into the areolar tissue of his own left flank a dose of the first (or attenuated) anticholeraic "vaccine," superior to that which proved protective to the above-named animals. The constitutional disturbance produced by the inoculation lasted twenty-four hours and consisted of an elevation of temperature, which rose from 36·6° C. to 37·5° C., headache, dryness of the mouth and high-coloured urine. There were no gastro-intestinal symptoms whatever. Locally there was pain at the seat of inoculation, with slight swelling of the part, and also of the corresponding lymphatic glands. The pain had completely disappeared by the fifth day, leaving some swelling, which, however, entirely disappeared in its turn four days later. On July 24th—i.e., six days after the first inoculation—a quantity of the second (or intensified) "vaccine" was injected into the areolar tissue of the (right) flank. The temperature rose to 38·6° C.; there was some local pain, but no swelling of the part or of the lymphatic glands was noted. The febrile condition lasted only twenty-eight hours, and the local pain had completely ceased three days after the inoculation. The digestive organs remained unaffected. Encouraged

by these results, M. Haffkine proceeded to inoculate certain of his compatriots. Dr. Jawein of St. Petersburg, who weighed seventeen kilos more than M. Haffkine, received on July 22nd the same dose of the first (or attenuated) "vaccine." The malaise, which lasted five hours only, was slight, the temperature rising from 37·2° C. to 37·6° C. The apparent local swelling lasted about three days, but some œdema could be perceived on pressure on the fourth day. Seven days after the first inoculation the strong virus was injected, the reaction this time being scarcely appreciable. In three hours the temperature had risen from 37·2° C. to 37·4° C., falling at the expiration of five hours to 36·9° C. The local phenomena were much less marked than after the first inoculation and the constitutional disturbance was conspicuous by its absence. On July 25th Dr. Tamamcheff of Tiflis was inoculated with four-fifths the quantity of "vaccine" that had served for M. Haffkine. At the moment of the operation Dr. Tamamcheff's temperature was 38° C. (100·4° F.), there being thus previously to the inoculation some fever. Nine hours later the mercury rose to 39·1° C. (102·3° F.), but the next morning it had fallen to 37·7° C. The local reactionary phenomena gradually disappeared, and the only intestinal trouble observed was some slight constipation two days after the operation. Pretty much the same phenomena were noticed in the case of M. Wilbouchewitch after inoculation.

The above most interesting observations, while revealing its innocuousness, do not of course prove as yet that M. Haffkine's anticholeraic "vaccine" affords the same protection to human beings against the onslaughts of the cholera bacillus as it undoubtedly does to the animals mentioned above. The experimental proof is, for obvious reasons, not available in the case of man. It is for clinicians inhabiting cholera-infested districts to test the value of a method which, if it prove really efficacious, will confer lasting honour on the name of its discoverer.

In conclusion, I may mention that the number of persons hitherto inoculated at the Institut Pasteur by the official operator, Dr. Roux, is thirty-two.

Sept. 14th.

Medical News.

HOSPITAL SATURDAY FUND.—The total amount now received on behalf of this fund for the present year reaches nearly £12,000.

WE regret to announce the death of Dr. Frederick G. Jackson, at his residence, Cliff-bridge-terrace, Scarborough, at the age of seventy-one years.

LONGEVITY IN IRELAND.—During the June quarter, of the deaths registered in Ireland eighteen were centenarians. Nine were 100 years, one 101, three 102, one 106, two 107, and one each at 108 and 115 years respectively.

INFECTIOUS DISEASES IN NEW YORK.—During the two weeks ending Aug. 30th the following were the number of cases treated and the mortality of the chief zymotic affections:—Typhoid fever, 96 cases and 21 deaths; scarlet fever, 75 and 3 deaths; measles, 138 and 23 deaths; diphtheria, 111 and 31 deaths; and small-pox, 13 and 4 deaths. There were no deaths from typhus fever or whooping-cough.

"THE GUARDIANS" AND CHLOROFORM ADMINISTRATION.—On Saturday at a meeting of the Dartford Board of Guardians an application was made by the medical officer for the assistance of a second practitioner when administering chloroform. The chairman said there would have to be an application to the guardians and the question of advisability could then be considered. The medical officer was called into the room and explained that there was a certain amount of danger in performing an operation under chloroform, and that he would be liable to censure from the coroner if death occurred. It was the rule of the profession to have two medical men in attendance at such a case. After some discussion the board agreed to the calling in of another medical man at an operation, the fee to be charged to the board.

CHARING-CROSS HOSPITAL.—This institution was reopened on Sept. 12th for the reception of patients, after having been closed for nearly two months for cleaning and repairs.

A NEW winter sanatorium for phthisical patients was opened on Aug. 25th, at Leysin, Canton de Vaud, Switzerland. The building contains 110 rooms, none of which are less than twelve feet in height; ninety of them look south and many are in communication with broad balconies.

ROYAL ALBERT HOSPITAL, DEVONPORT.—The governors of this institution have decided to realise £1700 from the invested funds, for the purpose of providing a new operating theatre, a hydraulic lift and consequent structural alterations, the estimated cost of which is under £2000. These improvements have been contemplated for some time.

BEQUESTS TO MEDICAL CHARITIES.—The will of the late Mr. Joseph Hobson, proprietor of the Theatre Royal at Leeds, has been proved at £30,000, exclusive of realty, which will probably realise over £100,000. He has left to the Leeds Infirmary £100 a year for ten years, to the Leeds Dispensary £50 a year for ten years, and smaller amounts to other charities.

PRESENTATIONS.—Mr. Conrad W. Thies, secretary of the Royal Free Hospital, Gray's-inn-road, has been on his approaching marriage presented by the management committee of the institution with a handsome case of knives and forks as a mark of appreciation of his services. He has also been the recipient of various presents from the medical and nursing staff and from the officers of the hospital.—Mr. R. Nelson Jones, L.R.C.P. Lond., M.R.C.S., Swansea, has been presented by the members of the ambulance class, in connexion with the St. John Ambulance Association, with a handsome silver inkstand, in recognition of services rendered to the class.

THE EYE INFIRMARY FOR NORTHUMBERLAND, DURHAM AND NEWCASTLE.—The annual report for the past year states that 2777 in- and out-patients were treated during the year. Dr. Jeaffreson (honorary house governor), in his report, remarks that the pressure upon the bed accommodation had been such as to necessitate the discharge of patients in stages of convalescence scarcely consistent with safety. At present there are only twenty-two beds, and he thinks that number should be raised to fifty. The balance sheet showed a deficit of £307 12*s.* 3*d.* The annual report concludes by observing that the support received by the institution from the factories of the district is very inadequate.

PROPOSED NEW HOSPITAL AT RUGBY.—At the meeting of the Rugby Local Board on Saturday a communication was received from the Local Government Board with reference to the application for sanctioning the borrowing of £1100 to purchase a site for an infectious hospital, and enclosing a copy of a letter they had addressed to the Rugby Rural Sanitary Authority, in whose district the proposed site stands, and who had refused to give their sanction. The Local Government Board were convinced that the provision of a hospital was important and that the proposed site was very suitable for the purpose. They understood that the rural sanitary authority withheld their consent because certain ratepayers had urged that patients in their parish would have no right of admission to the hospital.

BOOKS ETC. RECEIVED.

BAILLIÈRE, TINDALL, & COX, King William-street, Strand, London.
Alcoholism and its Treatment. By J. E. Usher, M.D. 1892. pp. 151. Price 3*s.* 6*d.*

CHURCHILL, J. & A., New Burlington-street, London.
Aix-la-Chapelle as a Health Resort. The English Edition. By Jas. Donelan, M.B., M Ch., B.A.O. 1892. pp. 323.

HIRSCHWALD, AUGUST, Berlin.
Die Nebenwirkungen der Arzneimittel. Von Dr. L. Lewin. 1892. pp. 783.

KIMPTON, H., High Holborn, and HIRSCHFELD, BROS., Fetter-lane, London.
Sea-sickness (Cause, Treatment, and Prevention), Voyaging for Health Resorts. By Thos. Dutton, M.D. Durh. Third Edition. Fiftieth Thousand. 1892. pp. 134. Price 2*s.*

LEWIS, H. K., Gower-street, London.
The Hydro-Electric Methods in Medicine. By W. S. Hedley, M.D. 1892. pp. 156.

LONGMANS, GREEN, & CO., London.
Mountaineering. By C. T. Dent and others. Illustrated. 1892. Price 10s. 6d.

MURRAY, JOHN, Albemarle-street, London.
Garden Design and Architects' Gardens. By W. Robinson, F.L.S. 1892. pp. 73.

PHILIP, G. & SON, Fleet-street, London; and PHILIP, SON, & NEPHEW, South Castle-street, Liverpool.
The Human Voice. By W. H. Griffiths. 1892. pp. 100. Price 2s. 6d.

SMITH, ELDER, & Co., Waterloo-place, London.
On the Principles and Exact Conditions to be observed in the Artificial Feeding of Infants. By W. B. Cheadle, M.A., M.D. Cantab., F.R.C.P. Second Edition. 1892. pp. 244.

SIMPKIN, MARSHALL, & Co., London.
Day Visions and Clairvoyant Night Dreams. By Joseph Darby. 1892.

PENTLAND, YOUNG J., Edinburgh and London.
Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. B. Tuke, M.D., and D. N. Paton, M.D. Vol. IV. 1892. pp. 254.

Report of the National Society for the Prevention of Cruelty to Children, 1891-92 (Central Office, Harpur-street, Bloomsbury, London, W.C.).—Vorlesungen über die Krankheiten des Herzens; von Dr. Oscar Fraentzel; III. (Schluss) (A. Hirschwald, Berlin, 1892).—Immunity from Phthisis as affected by Altitude in Colorado; by C. F. Gardiner, M.D. (reprint from the American Journal of the Medical Sciences, July, 1892).—Guy's Hospital Reports, Vol. XLVIII., 1891 (J. and A. Churchill, London, 1892).—Modern Materia Medica; by H. Helbing, F.C.S.; third edition, 1892 (Lehn and Fink, New York).—Bulletin of the Harvard Medical School Association, No. 3; Second Annual Meeting, held in Boston, June, 1892 (published by the Association, 1892).—Index-Medicus: Authors and Subjects; Vol. XIV., No. 8, August, 1892 (Trübner & Co., and Lewis, London).—Klinische und Experimentelle Studien. Aus dem Laboratorium; von Professor v. Basch.; II. Band (A. Hirschwald, Berlin, 1892).—Magazines for September: Sunday at Home, Leisure Hour, Boy's Own Paper, Boy's Out-door Games and Recreations, Girl's Own Paper, Girl's Own Out-door Book (Religious Tract Society), The Strand.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BAXTER, W. W., L.R.C.P., L.M.Edin., M.R.C.S., has been appointed Medical Officer for the Third and Fourth Sanitary Districts of the Tendring Union.

CAHILL, MARK F., L.R.C.P., L.R.C.S. Edin., has been appointed Assistant Surgeon to the Children's Hospital, Temple-street, Dublin.

CAUDWELL, HENRY, L.R.C.P., L.M., L.R.C.S. Edin., has been re-appointed Medical Officer for the First Sanitary District of the Woodstock Union.

DALBY, A. W., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer of Health for the Frome Rural and Urban Sanitary Districts, vice Parsons.

ELLIMAN, ARTHUR C., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Kent and Canterbury Hospital, vice Prentice, resigned.

GEDDIC, WM., M.D., C.M. Aberd., has been appointed Police Surgeon, Accrington.

GREENHALGH, J., L.R.C.P., L.M. Irel., has been reappointed Medical Officer for the Cumberworth Sanitary District of the Huddersfield Union.

GRIFFITH, AUGUSTINE, M.B. Lond., has been appointed Second Assistant Medical Officer to the Borough Asylum, Nottingham.

HEATON, ARTHUR F., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the Wrexham Infirmary.

JONES, G. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been reappointed Medical Officer for the West Ardsley Sanitary District of the Wakefield Union.

KIRTON, C. J., M.B. Lond., M.R.C.S., L.R.C.P., has been appointed Medical Officer for the Holywell Sanitary District of the Parish of St. Leonards, Shoreditch.

LAMBERT, F. W., L.R.C.P., L.M. Edin., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Calverley-with-Farsley Sanitary District of the North Bierley Union.

LAWSON, D. J., M.D., C.M. Edin., has been appointed Medical Officer for the Portland Sanitary District of the Weymouth Union.

LLOYD-DAVIES, HAROLD, M.B., C.M., has been appointed House Surgeon to the Devonshire Hospital and Buxton Bath Charity.

MACARTHUR, D., L.R.C.P., L.M. Edin., L.F.P.S. Glasg., has been reappointed Medical Officer for the Lofthouse-with-Carlton Sanitary District of the Wakefield Union.

MACGREGOR, D. A., M.D., C.M. Edin., has been reappointed Medical Officer for the Emley and Flockton Sanitary Districts of the Wakefield Union.

MACKENZIE, W. S., L.R.C.P., L.R.C.S. Edin., has been reappointed Medical Officer for the Sharlstone, Warmfield-cum-Heath, and Newland Sanitary Districts of the Wakefield Union.

MADDEN, THOMAS MORE, M.R.C.P. Irel., F.R.C.S. Edin., M.R.C.S., L.F.P.S. Glasg., has been appointed Consulting Physician to the Children's Hospital, Temple-street, Dublin.

MASON, WM., L.R.C.P., L.M., L.R.C.S. Edin., has been reappointed Medical Officer of Health for the St. Austell Rural and Urban Sanitary Districts.

OAKLEY, A. R. H., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer, for the Fifth Sanitary District of the Romford Union, vice Bruerton resigned.

READER, J., M.R.C.S., has been appointed Medical Officer for the Alverthorpe Sanitary District of the Wakefield Union.

ROULSTON, WM., M.D., M.Ch., M.A.O. Irel., has been reappointed Medical Officer for the Crofton Sanitary District of the Wakefield Union.

SANDERS, THOS., F.R.C.S. Eng., has been appointed Medical Officer for the Tenth Sanitary District and the Workhouse of the South Molton Union.

SANDERSON, C., L.R.C.P., L.F.P.S. Glasg., has been reappointed Medical Officer of Health, Hastings.

SINCLAIR, J. E., L.R.C.P., L.M., L.R.C.S. Edin., has been appointed Medical Officer of Health for the Parish of the Close of St. Peter, Westminster.

TATE, J. J., L.R.C.P., L.M., L.R.C.S. Irel., has been appointed Medical Officer for the Eleventh Sanitary District of the South Molton Union.

THOMSON, ANDREW, M.B., C.M. Edin., has been reappointed Medical Officer for Bretton West Sanitary District of the Wakefield Union.

THORNTON, GEO. ENT, M.D. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Clinical Assistant to the St. Marylebone Infirmary, vice Baines, resigned.

WALKER, H. U., L.R.C.P., L.R.C.S., L.M. Edin., has been reappointed Medical Officer for the Carlton Sanitary District of the Worksop Union.

WELSH, R. A., M.B., B.S. Durh., has been appointed Medical Officer for the Felton Sanitary District of the Alnwick Union.

WILKINSON, J., M.B., C.M. Edin., has been appointed Medical Officer for the Penkridge Sanitary District of the Cannock Union.

WINTLE, COLSTON, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Hospital for Sick Children and Women, Bristol.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

BETHLEM HOSPITAL.—Two Resident Clinical Assistants.

BRADFORD MEDICAL ASSOCIATION.—Assistant (out-door). Salary to commence £120 per annum. (Apply to Ulna, 38, Little Horton-lane, Bradford, Yorks.)

COUNTY ASYLUM, Prestwich, Manchester.—Assistant Medical Officer. Salary commences at £100 per annum, with prospect of increase, together with furnished apartments, board, washing and attendance.

COUNTY BOROUGH OF STOCKPORT.—Medical Officer of Health for the District of the Borough, and to the Infectious Diseases Hospital, and Surgeon to the Police Force, at a salary at the rate of £400 per annum.

DERBY PROVIDENT DISPENSARY.—Qualified Dispenser. Salary £78, house, and allowance for cleaning. (Apply to the Secretary, 18, Hardwick, Derby.)

GENERAL HOSPITAL, Birmingham.—Pathologist. Salary £120 per annum.

GENERAL HOSPITAL, Birmingham.—House Physician. Salary £70 per annum, with residence, board and washing.

GENERAL HOSPITAL, Birmingham.—Surgical Casualty Officer. Salary £70 per annum.

GENERAL INFIRMARY, Northampton.—Assistant House Surgeon. Salary £80 per annum, with furnished apartments, board, attendance and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Physician. Salary £60 per annum, with board and lodging in the hospital.

HOSPITAL FOR WOMEN (THE LONDON SCHOOL OF GYNÆCOLOGY), Soho-square, W.—Clinical Assistants.

HUDDERSFIELD INFIRMARY.—Honorary Physician.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon. Salary £50 a year, with board and lodging.

LANCASHIRE COUNTY ASYLUM, Rainhill, near Liverpool.—Pathologist. Salary £200 per annum, with furnished apartments, board, attendance, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—House Physician for six months. Salary at the rate of £40 per annum, with board and lodging.

ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES, &c., Henrietta-street, Covent-garden.—House Surgeon for six months. Honorarium 25 guineas; board, lodging, and washing.

WORCESTER COUNTY AND CITY LUNATIC ASYLUM.—Third Assistant Medical Officer. Salary £100 per annum, with board, lodging and washing.

Births, Marriages and Deaths.

BIRTHS.

CHAMBERLAIN.—On Sept. 10th, at Bramdean House, Southampton, the wife of Edward Twyford Chamberlain, L.R.C.P.Lond., M.R.C.S., of a son.

CLARKSON.—On Aug. 25th, at Poona, Bombay, the wife of Surgeon-Major Clarkson, of a daughter.

HENDERSON.—On Sept. 10th, at Hoshungabad, India, the wife of Surgeon-Major Cecil Henderson, of a daughter.

MORSE.—On Sept. 5th and 6th, at Upper Surrey-street, Norwich, the wife of Thomas H. Morse, F.R.C.S. Eng., of twin boys.

NICHOL.—On Sept. 8th, at 11, Ethelbert-terrace, Margate, the wife of Frank Edward Nichol, M.A., M.B., of a son.

RICE-OXLEY.—On Sept. 8th, at Streatham, the wife of A. J. Rice-Oxley, M.A., M.B., M.R.C.P. Lond., of a son.

SOUTAR.—On Sept. 11th, at Barnwood House, Gloucester, the wife of James Greig Soutar, M.B., of a daughter.

TURNBULL.—On Sept. 11th, at Ladbroke-grove, W., the wife of G. Lindsay Turnbull, M.B., of a daughter.

MARRIAGES.

BENTHALL—SHAW.—On Sept. 6th, at Oborne, Dorset, Winfred Benthall, M.B. Cantab., of Derby, to Phœbe Mary Christiana, widow of the late Matthew T. Shaw, and daughter of the late Henry Harrison, of Maple Lodge, Surbiton.

BLACKER—GOURLAY.—On Sept. 8th, at The College Church, St. Andrew's, Arthur Barry Blacker, M.D., Ebury-street, London, to Anna Isabella, third daughter of Henry Gourlay, J.P., Clatto House, Fifeshire.

CAMPBELL—PAULL.—On Sept. 10th, at the Ascension Church, Balhamhill, Richard Campbell, M.D., of Dalston, to Isabel Edith, eldest daughter of Alfred Paull, of Clapham-park.

CRESWELL—TOWGOOD.—On Sept. 12th, at Holt, Norfolk, John Edwards Creswell, M.B., seventh son of the late Edmund Creswell, Esq., of Gibraltar, to Catherine Burleigh, second daughter of the late Matthew Towgood, of Ceylon.

LANE—PINCHIN.—On Sept. 12th, at St. Andrew's, Stoke Newington, Frank Lane, L.R.C.P.Lond., M.R.C.S., L.S.A., to Florence Mary (Polly), youngest daughter of the late William Pinchin, of Snaresbrook, Essex.

TAYLOR—BISHOP.—On Sept. 7th, at Christ Church, Lancaster-gate, W., Seymour Taylor, M.D., M.R.C.P., of Seymour-street, Portman-square, to Edith, eldest daughter of Edgar Bishop, of Lancaster-gate and Highwood, Middlesex.

THORPE—SHUTTLEWORTH.—At Dallington Church, on Sept. 7th, by the Rev. P. Ward, Curate of St. Mary's, East Moulsey, assisted by the Rev. T. C. Beasley, M.A., Vicar of the Parish, Arnold Edward Thorpe, L.R.C.P., &c. (Edin.), of Newport, Salop, to Edith, second daughter of Joseph Shuttleworth, of Elmleigh, Dallington, Northamptonshire.

WARD—MORGAN.—On Sept. 8th at St. James's Church, Swansea, Stanley Edward Ward, L.R.C.P., M.R.C.S., of Brasted, Kent, to Katharine Sophia Morgan, youngest daughter of the late Rev. Lewis Morgan, Vicar of Llangadock, Carmarthenshire.

DEATHS.

CLARKE.—On Sunday, Aug. 28th, 1892 (suddenly), Thomas Edward Clarke, M.R.C.S. Eng. & L.S.A., aged 46 years.

FURSE.—On Sept. 12th, at Morton-crescent, Exmouth, Edwin Furse, J.P., Surgeon, South Molton, Devon, aged 53.

JACKSON.—On Sept. 6th, at Scarborough, Frederick Gervis Jackson, M.D., aged 71.

ROGERS.—On Sept. 2nd, at Cannon-place, Brighton, R. J. Rogers, M.R.C.S.

SALZMANN.—Recently, at his residence, Montpelier-road, Brighton, F. W. Salzmann, M.R.C.S.

STEVENSON.—On Sept. 3rd, at San Jacinto, California, Geo. Stevenson, M.A., M.R.C.S., second son of James Stevenson, M.D., Medical Officer of Health for Paddington, aged 35.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

BLISTERING BY LIVING CANTHARIDES.

Mr. Richmond Leigh (Liverpool) writes:—

"A correspondent on the West Coast of Africa recently wrote me that the residents were suffering from a plague of the cantharides fly, as he termed it. These insects were so numerous and troublesome that he was unable to rest in bed, and had to pass the night in his sitting-room, being blistered all over at the time of writing. Some of his neighbours were in a terrible state, evidently much worse than himself. Fortunately no serious trouble resulted; for though the blisters were very painful, they disappeared spontaneously in a few days. This is a new terror added to a residence in the tropics, though it must be an uncommon one, as my correspondent has not mentioned it before, though he has lived in the neighbourhood three or four years. It is interesting to know that the bite of the living insect has a similar effect to that of the preparations of the dead. The active principle is evidently in the juices as well as the solids of the body. I do not remember to have seen any reference to this action of cantharides, and send it you trusting it may be of interest to your readers."

Querulus.—1. Many men do so practise with only surgical qualifications. Their certificates are accepted as from "registered" practitioners. We are not aware of their being prosecuted under the Apothecaries Act.—2. A pure physician should not have "Surgeon" on his door unless his licence, as in the case of the London College of Physicians, purports to be both a medical and surgical qualification.

Mr. H. Bruce Jones (Reading).—We do not recommend practitioners. Our correspondent should consult his usual medical attendant.

S. W. Dublew does not enclose his card.

A RARELY OBSERVED CAUSE OF FACIAL ERYSIPELAS—TO WIT, A FLY.

To the Editors of THE LANCET.

SIRS,—I was called a few days ago to a case of well-marked facial erysipelas, the parts primarily affected being the left malar region and the external ear. The patient was unaware of having had any injury to the part, and it seemed, therefore, that the attack might be assumed to be "idiopathic." Being sceptical as to the possibility of any disease arising "idiopathically," I inquired particularly if she had had any running from the ear, and learnt that there had been a slight watery discharge for a few hours before the attack commenced, which was two days before I saw her. The parts were too much inflamed to allow of any examination of the meatus with the speculum; but on the strength of the history of a precedent discharge I ordered the external auditory meatus to be irrigated with a hot solution of perchloride of mercury, 1 in 3000. This gave great relief, and on a subsequent day the patient told me that she was in the habit of picking dry wax out of her ears with the head of a pin. Whenever she did this the operation was followed by a thin watery discharge for a few hours. She had thus treated both ears on the day before the present attack began, and on the following morning had been woke up by a fly getting into her left ear, and she had had some difficulty in extracting it. During the course of the day the premonitory symptoms of the attack set in. Two or three days later, when the symptoms were abating on the left side, a similar but less acute attack developed on the right side, commencing at the auditory meatus. There seems little room to doubt that the fly carried the poison, which produced the attack, to a slight abrasion inside the left external meatus, and probably the patient's fingers carried some desquamating particles to a similar slight abrasion on the other side. I have ventured to submit this case to the notice of your readers because this sequence of cause and effect may probably be a typical one, though one that would easily escape observation.

I am, Sirs, yours faithfully,

Hanley, Staffs, Sept. 1st, 1892. ARTHUR E. NEVINS, F.R.C.S. Edin.

MEDICAL EDUCATION IN SWITZERLAND.

THE final or professional examination is divided into two parts—(1) Examen Pratique; (2) Examen Oral. Both must be passed at the same time, but a candidate may be rejected on one or the other—there is no balancing of marks, or making up deficiency in one subject for weakness in another. The students are aware of what is required and work very hard in consequence. Although they are as a rule extremely well up, and rarely under five or six years' standing, it has happened that 25 or 50 per cent. have been rejected at an examination (2 out of 4 on one occasion last year). The dates and subjects of the last examination are appended. The language required is the French. The following is an account of the medical examination for the Federal Diploma, held at Geneva:—*Examen Pratique.*—April 27th, Medicine (written), four hours; 28th, Hygiene (written), four hours; 29th, Surgery (written), four hours; May 1st, Pathological Anatomy and Microscopic Specimens; 2nd, Gynæcology and Manœuvres on the Mannequin; Medicine, with cases; 7th, Surgery, with cases; Operations on the Dead Body; 12th, Medical Jurisprudence (written), four hours; 13th, Ophthalmology. *Examen Oral.*—May 25th, Pathology, Physiology; 26th, Surgery, Diseases of Women and Accouchements; 27th, Medicine, Hygiene, Therapeutics.

Mr. Bradford.—Our correspondent should repeat the narration of the facts to the Registrar-General for Scotland. In England such a case would be investigated by the coroner of the district. Failing any satisfactory reply from the Registrar-General, the facts should be reported to the General Medical Council.

R. B. K.—Our correspondent may rely on the accuracy of the information; but in his own interest he should take the trouble to verify it for himself.

"THE DEATH CERTIFICATE."

To the Editors of THE LANCET.

SIRS,—With regard to the giving of death certificates, I beg to say I lately went to act as locum tenens for a friend who was getting married. Just before the ceremony he called in to see an old lady who was dying, and within two hours started on his honeymoon trip with an uncertain destination. In the meantime the old lady had died, and her friends came the same day for the certificate, which they were anxious to have at once, as the registrar lived in another village some miles off, whilst they were at the same time four miles from the surgery. Being rather puzzled what to do under the circumstances, as it was so uncertain when I should hear from my friend to say where he was, not to mention the delay that would probably ensue before I could write to him, I at length made out a certificate, crossing out the letter "I" in each place and inserting my friend's name instead, giving the cause of death, signing my own name, and adding a postscript stating the circumstances of the case, and this the registrar duly accepted. I did not go to see the body, however; but it has struck me that this should never be neglected, as it is quite possible, though improbable, that great frauds might be perpetrated upon insurance companies otherwise. For suppose a patient seems to be desperately ill, that the medical attendant prematurely gives up all hope, and that before his next visit he receives an application for the certificate from the friends, whereas in reality the patient has rallied and ultimately recovers, it would be a disagreeable business for the medical attendant if he incautiously granted the certificate without having been to view the body. If the fraud were found out the parties concerned in it, being evidently not over-scrupulous, might probably try to drag him into it and even represent him as the prime instigator of it. It seems to me therefore that the law should make it compulsory for the medical practitioner to certify not only the cause but also the *fact* of death; for there is another form of fraud that might be perpetrated—viz., a child or idiot cheated out of an inheritance. I myself have not made it a rule to view the body, but I shall in future always do so.

I am, Sirs, yours obediently,
Sept. 12th, 1892. C. L.

To the Editors of THE LANCET.

SIRS,—Some time ago I was called in on an emergency to see the patient of one of the oldest practitioners in the West-end. It was a case of apoplexy; the patient died in a few hours. I sent for her medical attendant, who had not seen her for several months, and suggested that he was the one to give the certificate, to which he agreed. I produced the printed form; but, to my astonishment, he said he never used one, and that his certificates had never been refused by the registrars. He wrote on a sheet of note-paper and worded it as he thought proper. I suppose the present Act does not compel us to use the form supplied by the registrar.—I am, Sirs, yours obediently,
Sept. 9th, 1892. S. G.

"FUCUS VESICULOSUS."

To the Editors of THE LANCET.

SIRS,—Referring to the note of "Enquirens" on fucus vesiculosus in THE LANCET of the 20th ult. I may state that we have lately treated a patient by a course of that drug. While the patient was taking the liquid extract in drachm doses there was a slight diminution in weight in the first week, but in the succeeding fortnight his weight rose 1lb—viz., from 16st. 11lb. to 16st. 12lb. The drug was then discontinued. The weight in the succeeding fortnight rose half a pound, and by the next week again fell to 16st. 12lb. Then another course was tried in combination with liquor potassæ, and after a fortnight the weight was reduced to 16st. 10½lb., there it remained steady and the drug was again discontinued. The symptoms of which the patient complained were thirst and unwieldiness, and it would appear that the drug relieved the thirst while it failed materially to reduce the obesity.

I am, Sirs, yours faithfully,
A. R. URQUHART, M.D.
James Murray's Royal Asylum, Perth, Sept. 14th, 1892.

"THE MIDDLESEX HOSPITAL."

To the Editors of THE LANCET.

SIRS,—Will you kindly permit me to make a correction and also an addition to an item under the above heading in the Medical News in your last issue?

The name of the lady under whose will £1000—the executor exercising a wise discretion—have been awarded to the Middlesex Hospital is *Holm*, not "Holms." She was the widow of the late Henry Haley Holm, M.R.C.S., from whose estate the benefaction in question, in common with the many others just distributed, was exclusively derived. Henry Haley Holm, although circumstances caused his early retirement from the profession, was not altogether unknown in his time, and I think his name may be found in the earlier numbers of your journal. He adopted with considerable enthusiasm the phrenological theories of the late Dr. Spurgheim, of whom he was the intimate and valued friend, in common with his father, the late J. D. Holm of Highgate. The latter devoted three of his sons—namely, Henry Haley Holm, Joseph White Holm (both deceased) and myself—to the profession, and we alone of that name have been on its roll in this country. I trust I may therefore be pardoned for wishing that the source whence these benefactions are being made may not be overlooked. I think H. H. Holm was, with my father, one of the many original founders of the London University, now University College.—I am, Sirs, yours truly,
Stratford-place, W., Sept. 13th, 1892. JOHN HOLM.

Correspondent.—Such limited qualifications are now neither recognised nor registrable. As to the offence of "covering" by a practitioner whose assistant holds the L.M., it would depend on circumstances. If he lived at a distance and had independent charge of cases the offence would be committed—not otherwise.

Mr. L. G. Guthrie.—Our correspondent puts the awkwardness—not to say absurdity—of such decisions as to the mode of notification effectively. But we cannot find room for his communication. We must restrict ourselves for the present to comments on particular cases.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Althaus, London; Mrs. Adcock, Hendon; Dr. Allan, Glasgow; Mr. Anderson, Dublin; Mr. Atkinson, London; Mr. Bennett, London; Dr. Irwin Bolton, Constanta, Roumania; Messrs. Burroughs, Wellcome and Co., London; Mr. F. F. Burghard, London; Mr. Bell, Lancaster; Mr. T. B. Browne, London; Mr. Bland; Messrs. Butler Bros., Cape Colony; Mr. Bulger, Ettingshall; Mr. Bruckstone, Colwyn Bay; Dr. Boreham, Torquay; Mr. Clarke, Dalton-in-Furness; Mr. W. Frank Colclough, Dartford; Mr. Carpenter, Portsdown-road; Miss F. Power Cobbe; Miss Cox, Manchester; Dr. Chamberlain, France; Mr. Rupert C. Chicken, Nottingham; Professor Clark, Glasgow; Dr. C. Creighton, London; Mr. Cade, Lincoln; Mr. E. Chesshur, London; Mr. W. A. Chapple, Wellington, N.Z.; Mr. Dunlop, Clapton; Messrs. W. Dawson and Sons, London; Mr. Drewett, Kingston-on-Thames; Mr. E. Young Earles, Torquay; Surgeon-Captain G. Edmonds, Bombay; Mr. W. H. Fenton, London; Mr. Foster, Shipley; Mr. Hewett, London; Mr. John Holm, London; S. C. B.; Dr. Hunter, London; Messrs. Hopkinson and Co., Nottingham; Mr. Hunt, Biggleswade; Messrs. Henderson and Son, St. Andrews; Mr. J. Heywood, Manchester; Mr. Rowland Hills, Essex; Mr. Harrison, Derby; Mr. Hornibrook, London; Mr. Hyde, Stockport; Mr. Johnson, Gloucester; Dr. A. B. Judson, New York; Mr. Jones, London; Mr. Jones, South Wales; Mr. H. Bruce Jones, Reading; Messrs. Krohnn Bros., London; Dr. R. Kirk, Glasgow; Mr. Lewis, Rainhill; Mr. Lancaster, Canterbury; Mr. Cyrus Legg, Sussex; Dr. Lanphier; Mr. R. Leigh, Liverpool; Dr. J. Fletcher Little, London; Dr. McLauchlan, Birmingham; Dr. W. A. Murray, Southend; Dr. Jas. Murphy, Sunderland; Mr. J. Mansfield, London; Dr. McFadyean, London; Dr. Monson; Mr. Montford, Harlesden; Dr. Orr, Sittingbourne; Messrs. Oppenheimer, Son and Co., London; Messrs. Oliver and Boyd, Edinburgh; Messrs. Preston Bros. and Co., Huddersfield; Mr. G. P. Pocock, London; Brigade-Surgeon Pringle, Redcar; Dr. L. E. Parkhurst, Northants; Mr. B. A. Rugg, London; Mr. F. J. Rebman, London; Messrs. Richardson Bros., Liverpool; Mr. E. W. Ryde, Birmingham; Dr. Richardson, London; Mr. Ricker, St. Petersburg; Mr. Sell, London; Dr. Lindsay Steven, Glasgow; Mr. R. D. R. Sweeting, London; Mr. R. Milner Smyth, Norfolk; Mr. Simcock, Manchester; Messrs. C. Stanley and Son, Rotherham; Dr. F. A. Southam, Manchester; Dr. Heywood Smith, London; Mr. Stenhouse, Glasgow; Mr. W. Stanwell, Rochdale; Mr. Thrush, Southsea; Dr. Thorp, Liverpool; Mr. Jas. Thin,

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LETTERS, *each with enclosure*, are also acknowledged from—Mr. H. Ashley-Belbin, Sheffield; Mr. Anderson, Carmarthen; Messrs. Battle and Co., Paris; M. Berthier, Paris; Mr. Butlin, London; Mr. Beck, East Grinstead; Mr. Bennett, London; Mr. Beckton, London; Mr. Boys, St. Albans; Mr. Balmford, Morecambe; Mr. Bolam, Newcastle-on-Tyne; Mr. Bunting, Southsea; Mr. Bremner, Leicester; Dr. Barrett, West Bromwich; Dr. Chandler, Ramsgate; Mr. Clegg, Gosforth; Mr. Dougall, Wandsworth; Messrs. Debenham and Co., London; Mr. M. E. Ellis, Bath; Mr. Elfatrick, Wilts; Messrs. Edwards and Co., Wrexham; Mr. Evans, Grosmont; Mr. Fiske, Aylesford; Mr. S. Gahan, Margate; Mr. Gunnell, Wrexham; Dr. Griffith, Milford Haven; Mr. Garner, Clonmel; Miss Hooper, London; Mr. Hurst, Todmorden; Messrs. Humphreys, London; Mr. Illingworth, Accrington; Canon Jeffreys, Hawkhurst; Mr. Kitson, Rockbeare; Mr. V. K. Kisloskar, India; Messrs. Keith and Co., Edinburgh; Messrs. Lamb and Bailey, Leeds; Mr. Lauder, Margate; Dr. Latham, Makerfield; Mr. Lamb, Albrighton; Mr. Lancaster, Clitheroe; Dr. Lavers, Edenburg, South Africa; Dr. Maurice, Marlborough; Rev. R. H. Manley, Cornwall; Mr. Merry, Hemel Hempstead; Messrs. C. Mitchell and Co., London; Mr. Moore, Breewood, Staffs; Rev. H. Morgan, Great Malvern; Mr. Morris, Basingstoke; Mr. Morris, Swansea; Mr. A. Nicholson, Annan, N.B.; Mr. Norman, Buckfastleigh; Dr. O'Clery, co. Cork; Dr. Polson, Sutherlandshire; Dr. Robertson, Edinburgh; Dr. Ryder Richardson, Staplehurst; Messrs. Robinson and Sons, Chesterfield; Mr. Rhodes, Huddersfield; Dr. Spicer, London; Mr. Shand, Bradford; Mr. Shorting, Broseley; Messrs. Stent and Sons, Guildford; Dr. Swift, Adelaide; Mr. Saint, Carlisle; Mr. Thomas, Carmarthen; Mr. Tyte, Minchinhampton; Mr. Ubsdell, South Devon; Dr. Waters, Liverpool; Dr. White, Droitwich; Messrs. Walker and Co., Heckmondwike; Mr. Ward, London; Mr. Woodman, Bridgewater; Arthurus, London; A. B., London; A. Z., London; A. B. C., London; A. B., Longton; Art, London; A. R., London; Asthma, London; Beta, Sheffield; B. A. S., Liverpool; Bachelor, London; B., London; Cactina, London; Chief Surgeon, Tredegar; Clayton Hospital, Wakefield; Cortex, Brixton; Cutes, London; C. O., Aberdeen; E. M., London; Mrs. G., Dover; Hackney Furnishing Co.; J. F. E., London; K. L. M., London; Locum, Manchester; Longford Wire &c. Co., Warrington; L. A. D., Bradford; M.B., London; M.D., Loughborough; Medicus, Strand; M.R.C.S., Birkenhead; Medicus, Cornwall; Meta, London; N. W., London; Nerve, London; Omega, London; O. P., London; P. P., Fulham; P. M., Sheffield; Practitioner, London; Sigma, London; Secretary, Co. Borough of South Shields; Surgeon, Keighley; Surgeon, Northover; Secretary, Derby Borough Asylum; Sanitation, London; Secretary, Royal Western Ophthalmic Hospital; Scotia, London; Sanitas Co., London; Sussex County Hospital; Secretary, Victoria Infirmary, Northwich; St. John Ambulance Association, London; Secretary, Warneford Hospital, Leamington; V. C., London; Yeovil Union; Z., Sheffield.

NEWSPAPERS.—*West Sussex Gazette, Blackburn Standard, John O'Groat Journal, Perthshire Journal, Newcastle Journal, Nature, The Orillia Packet (Ontario), Surrey Gazette, Hackney Gazette, Sale and Stretford Guardian, Citizen, Down Recorder, Electrical Review, Royal Cornwall Gazette, West Bristol Advertiser, Liverpool Journal of Commerce, Times of India, The Bengalee Advertiser (Adelaide), &c.*, have been received

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 15th, 1892.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Sept. 9	29·99	N.W.	53	50	85	65	46	..	Cloudy
,, 10	30·03	W.	60	58	80	61	53	..	Overcast
,, 11	30·10	S.W.	59	56	91	67	55	..	Cloudy
,, 12	30·15	S.W.	63	60	106	70	58	·04	Overcast
,, 13	29·78	S.W.	64	62	108	70	60	..	Overcast
,, 14	30·16	S.W.	54	51	111	69	49	..	Hazy
,, 15	30·10	W.	56	54	104	60	51	..	Hazy

Medical Diary for the ensuing Week.

Monday, September 19.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M., and on Tuesday, Wednesday, Friday, and Saturday at the same hour.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M. and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.
UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.

Tuesday, September 20.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.
GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.

Wednesday, September 21.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1.30 P.M.; Saturdays, 2 P.M. Obstetrical Operations, Thursdays, 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M., and on Thursday and Friday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.
ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations 2.30 P.M.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

Thursday, September 22.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

Friday, September 23.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, September 24.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

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